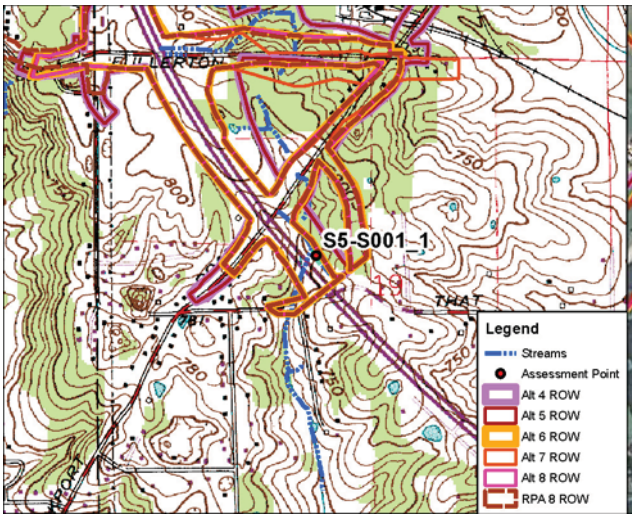
APPENDIX M
DRAFT STREAM ASSESSMENT REPORT

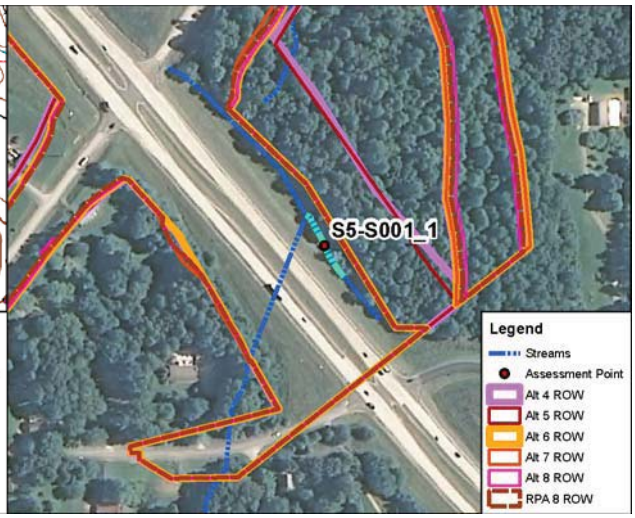
TECHNICAL REPORT APPENDICES

APPENDIX A	Stream Impacts and Stream Relocation Lengths by Alternative
APPENDIX B	**Stream Site Reports and Data Sheets**

Stream Impacts S5-S001_1



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	2.0 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1763704 ft	**UTMN:** 14205286 ft		

Stream S5-S001_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	188	0.01	0.12
5	188	0.01	0.12
6	188	0.01	0.00
7	188	0.01	0.00
8	188	0.01	0.00
RPA 8	188	0.01	0.00

Description of Potential Impact:
Impacts to S5-S001_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of INDOT ROW on the left bank and new field on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S001_1 are on the second page of this form.

Stream Impacts S5-S001_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S001_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 188 LAT.: 39.11637 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS COMMENTS: (Long: -86.56532) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.61

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream **2.20**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

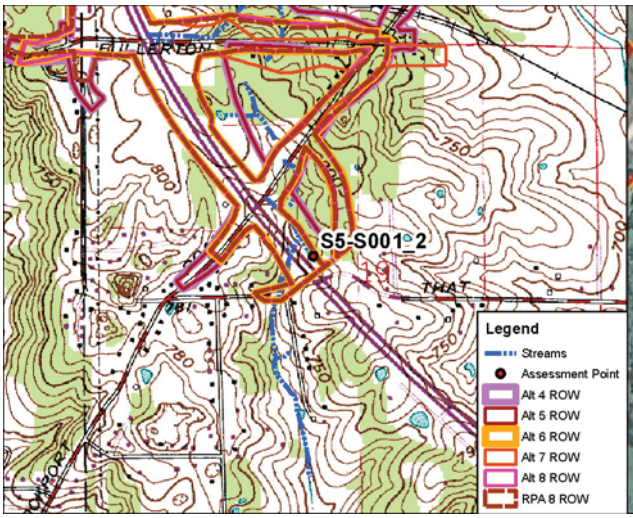
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

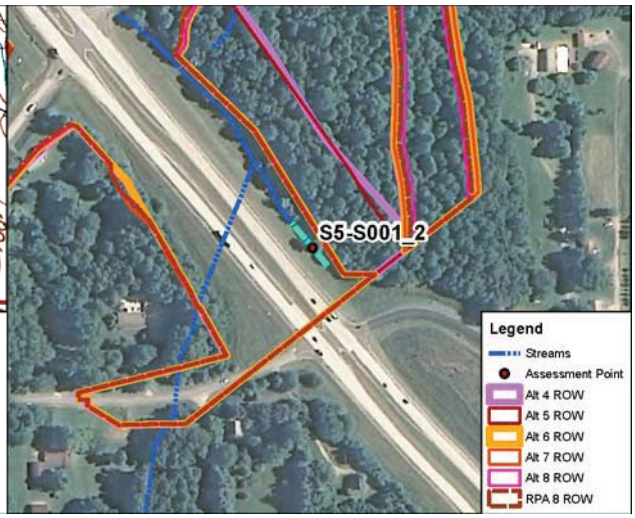
See Stream Assessment Form
S5-S001_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S001_2



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.3 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	0.9 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	17	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/silt
UTME: 1763808 ft	**UTMN:** 14205142 ft		

Stream S5-S001_2 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	144	0.01	0.25
5	144	0.01	0.25
6	144	0.01	0.00
7	144	0.01	0.00
8	144	0.01	0.00
RPA 8	144	0.01	0.00

Description of Potential Impact:
Impacts to S5-S001_2 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The roadside ditch is located within existing INDOT ROW. This ditch flows to S5-S001_1. There is no riparian buffer associated with this artificial channel. The floodplain consists of INDOT ROW on the left bank and new field on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S001_1 are on the second page of this form.

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Stream Impacts S5-S001_2

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S001_2 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 144 LAT.: 39.11597 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS COMMENTS: (Long: -86.56495) (Roadside Ditch-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	20%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	75%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40

12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 1.3'/0.9' **AVERAGE BANKFULL WIDTH (meters):** 0.40

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☑ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream **2.24**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

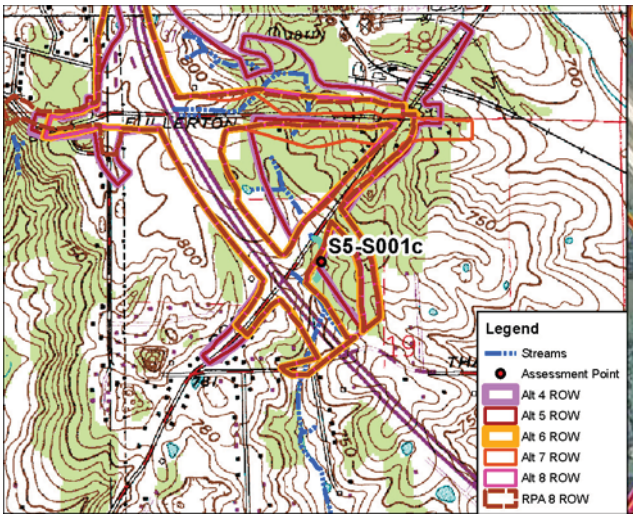
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

See Stream Assessment Form
S5-S001_2 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S001c



Site Location on Clear Creek USGS Quadrangle

Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	6.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	33	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/leaf pack
UTME: 1763622 ft	**UTMN:** 14205856 ft		

Stream S5-S001c – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	411	0.06	1.56
5	408	0.06	1.55
6	226	0.03	0.82
7	172	0.03	0.64
8	223	0.03	0.81
RPA 8	209	0.03	0.76

Description of Potential Impact:
Impacts to S5-S001c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. This is an isolated resource. The substrate is predominately sand and leaf pack. There is a wide riparian buffer associated with this stream. The floodplain consists of mature forests on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S001c are on the second page of this form.

Stream Impacts S5-S001c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 33

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S001c | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.11793 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS | COMMENTS: (Long: -86.56560) Isolated (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	10%
☐	BOULDER (>256 mm) [16 pts]	5%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	70%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 13

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 6.6'/0.3' **AVERAGE BANKFULL WIDTH (meters):** 2.01

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☑	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream **2.32**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **15%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

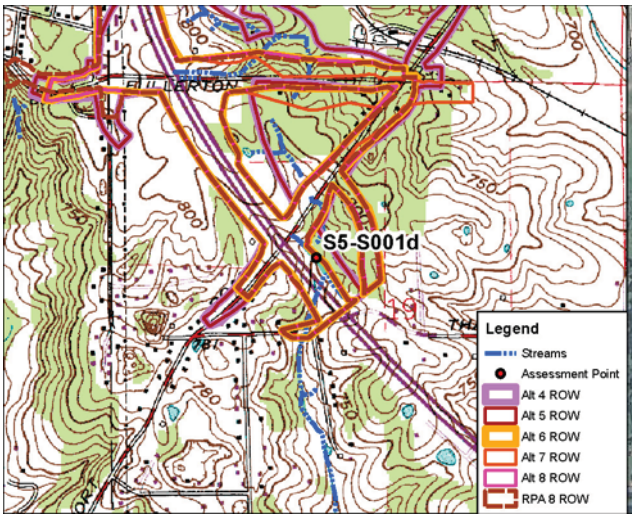
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

See Stream Assessment Form
S5-S001c for site topographic map,
aerial photograph, and resource photographs

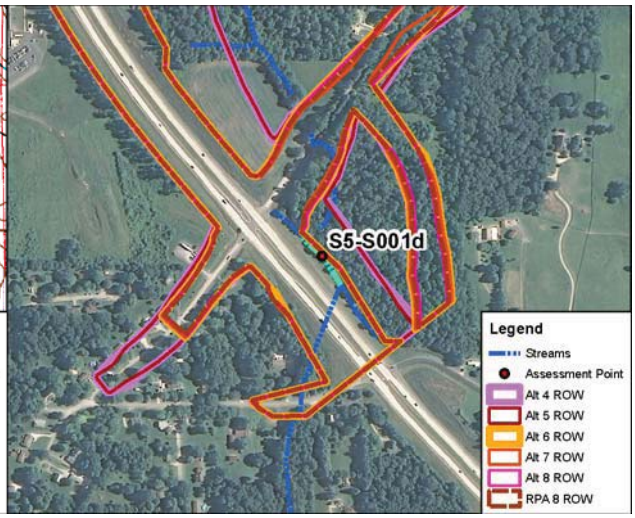
FLOW →

Save as pdf Reset Form

Stream Impacts S5-S001d



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	2.0 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	17	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Silt/sand
UTME: 1763562 ft	**UTMN:** 14205512 ft		

Stream S5-S001d – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	312	0.01	0.14
5	312	0.01	0.14
6	312	0.01	0.05
7	312	0.01	0.04
8	312	0.01	0.05
RPA 8	312	0.01	0.04

Description of Potential Impact:
Impacts to S5-S001d for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. There is a no riparian corridor on either bank where the Alternatives cross this ditch. The floodplain consists of existing INDOT ROW and new field. This ditch flows into a culvert under SR 37 (S5-S001e). Photographs taken upstream and downstream in the area where these Alternatives cross S5-S001d are on the second page of this form.

Stream Impacts S5-S001d

Photograph Taken Upstream

Photograph Taken Downstream

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S001d | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.11699 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS | COMMENTS: (Long: -86.56582) (Roadside Ditch-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	1%	☑	SILT [3 pt]	60%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	39%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 1.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40: 12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW = 2.0'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 0.61

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream **2.20**

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

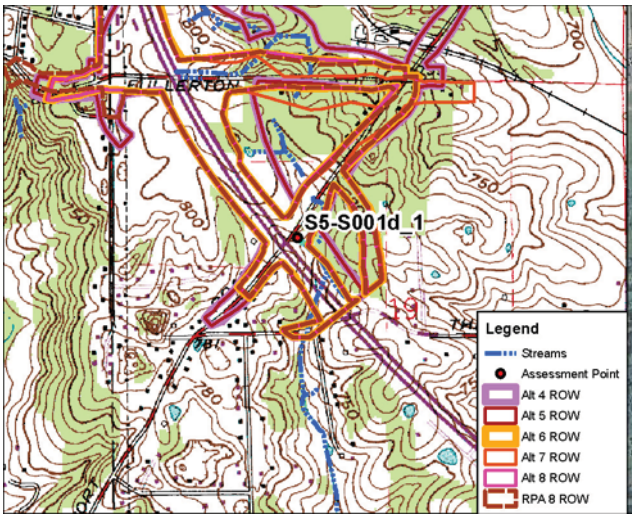
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

See Stream Assessment Form
S5-S001d for site topographic map,
aerial photograph, and resource photographs

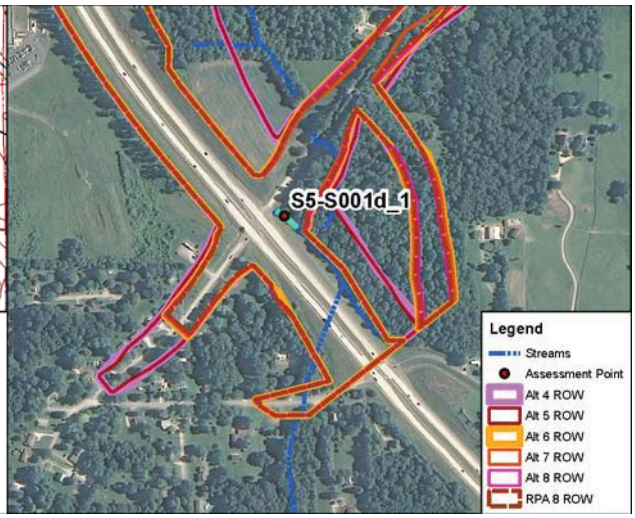
FLOW →

Save as pdf Reset Form

Stream Impacts S5-S001d_1



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	5.0 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	22	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1763351 ft	**UTMN:** 14205718 ft		

Stream S5-S001d_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	146	0.02	0.20
5	146	0.02	0.20
6	146	0.02	0.19
7	146	0.02	0.18
8	146	0.02	0.19
RPA 8	146	0.02	0.19

Description of Potential Impact:
Impacts to S5-S001d_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a dump rock gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of INDOT ROW on the left bank and new field on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S001d_1 are on the second page of this form.

Stream Impacts S5-S001d_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 22

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S001d_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 145 LAT.: 39.11756 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS COMMENTS: (Long: -86.56656) (Dump Rock Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40: 7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 4.9'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 1.49

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek (>2 miles)** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

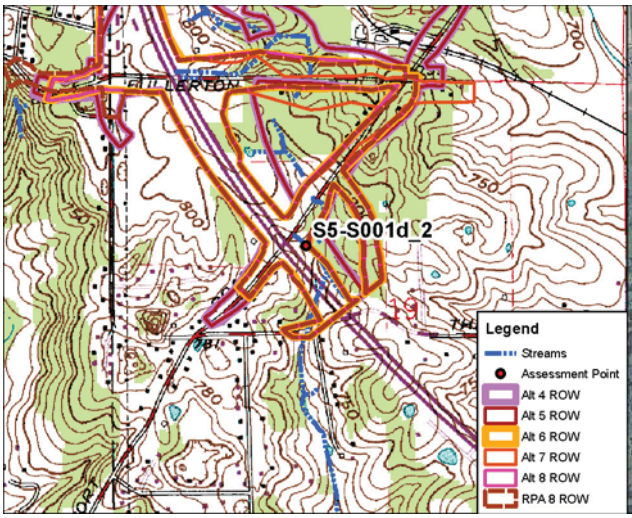
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

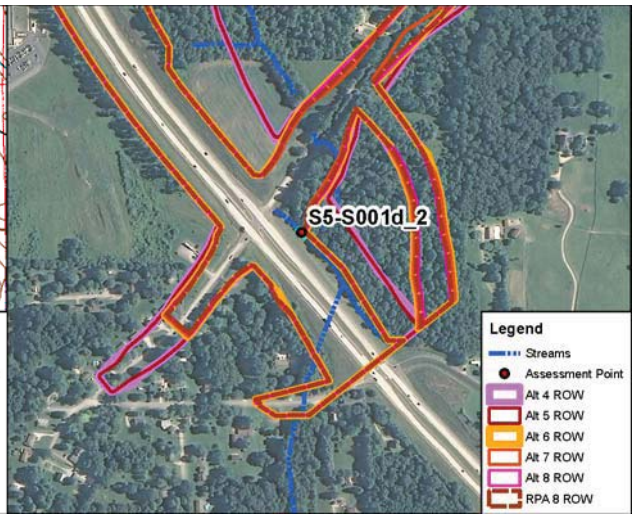
See Stream Assessment Form
S5-S001d_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S001d_2



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	2.0 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	17	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Silt/Sand
UTME: 1763440 ft	**UTMN:** 14205632 ft		

Stream S5-S001d_2 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	70	0.01	0.43
5	70	0.01	0.43
6	70	0.01	0.01
7	70	0.01	0.01
8	70	0.01	0.01
RPA 8	70	0.01	0.01

Description of Potential Impact:
Impacts to S5-S001d_2 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a roadside ditch located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of INDOT ROW on the right bank and new field on the left. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S001d_2 are on the second page of this form.

Stream Impacts S5-S001d_2

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S001d_2 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 70 LAT.: 39.11732 LONG.: RIVER CODE: RIVER MILE:

DATE: 02/19/13 SCORER: DEW COMMENTS: (Long: -86.56624) (Roadside Ditch-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	1%	☑	SILT [3 pt]	60%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	39%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 1.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40

12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 2.0'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 0.61

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek (>2 miles)** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **02/18/13** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

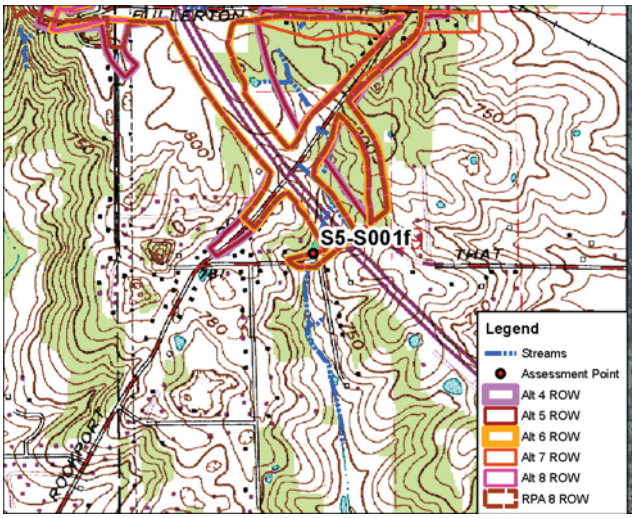
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

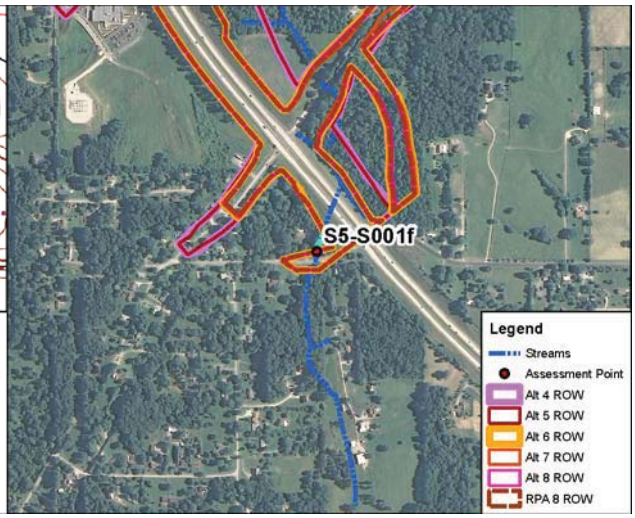
See Stream Assessment Form
S5-S001d_2 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S001f



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	4.9 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.0 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	65	**Watershed Area:**	0.08 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1763461 ft	**UTMN:** 14204827 ft		

Stream S5-S001f – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	25	0.01	0.15
5	25	0.01	0.14
6	25	0.01	0.14
7	25	0.01	0.14
8	25	0.01	0.14
RPA 8	25	0.01	0.14

Description of Potential Impact:
Impacts to S5-S001f for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and gravel. There is a narrow riparian corridor along the left bank while the right bank has a wide riparian buffer. The floodplain consists primarily of immature forest on the right bank and maintained INDOT ROW adjacent to the left bank. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S001f are on the second page of this form.

Stream Impacts S5-S001f

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 65

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S001f | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.08

LENGTH OF STREAM REACH (ft): 184 | LAT.: 39.11511 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.56618) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	2%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	3%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	5%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☑	GRAVEL (2-64 mm) [9 pts]	30%	☐ ☐	MUCK [0 pts]	0%
☑ ☐	SAND (<2 mm) [6 pts]	60%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40: 20

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☑	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 28

Pool Depth Max = 30: 30

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 4.9'/1.0' **AVERAGE BANKFULL WIDTH (meters):** 1.49

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☑	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **25%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

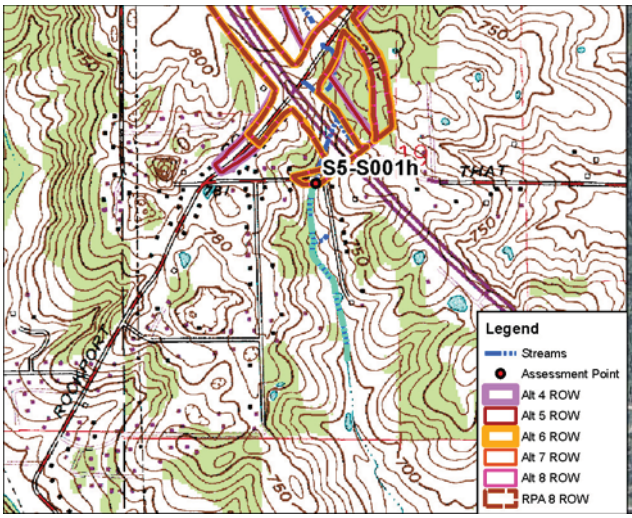
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

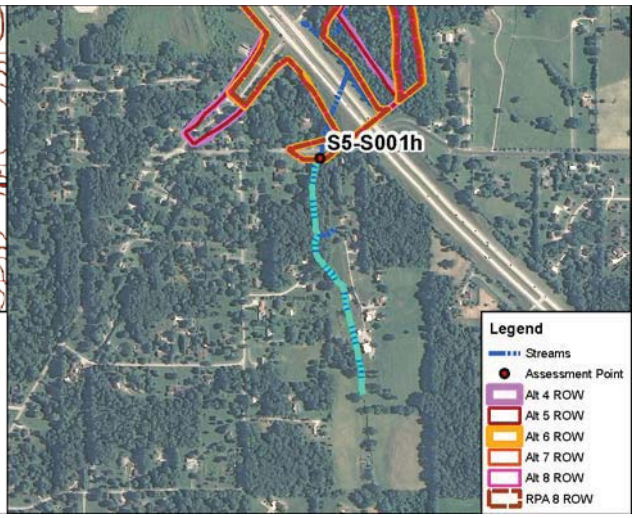
See Stream Assessment Form
S5-S001f for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S001h



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

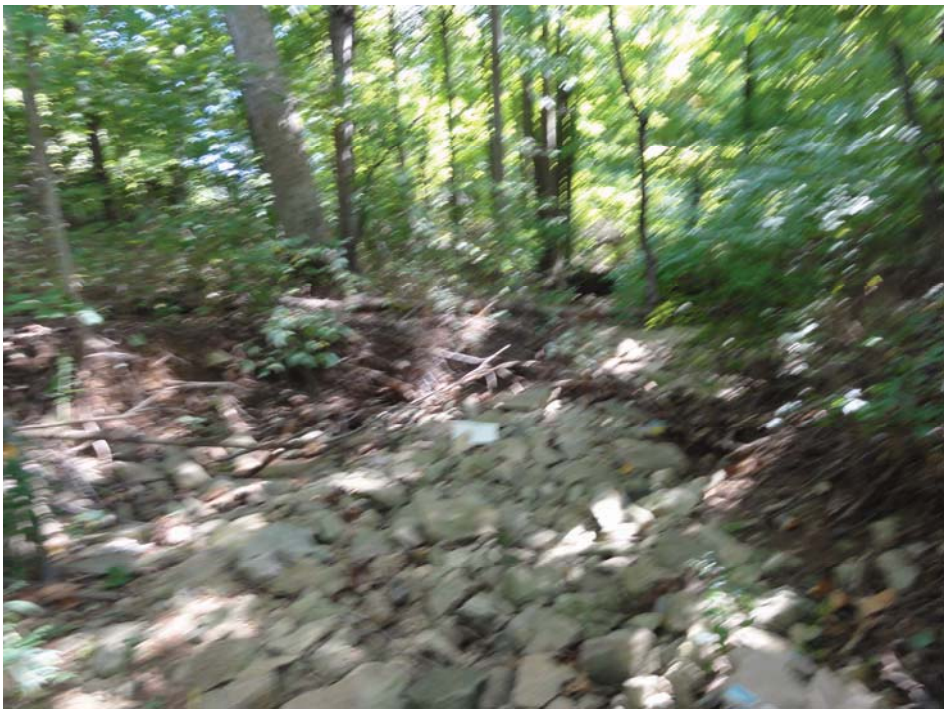
Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	4.9 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.0 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	65	**Watershed Area:**	0.08 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1763438 ft	**UTMN:** 14204690 ft		

Stream S5-S001h – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	34	0.01	0.03
5	34	0.01	0.03
6	34	0.01	0.03
7	34	0.01	0.03
8	34	0.01	0.03
RPA 8	34	0.01	0.03

Description of Potential Impact:
Impacts to S5-S001h for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and gravel. There is a narrow riparian corridor along the right bank while the left bank has a moderately wide riparian buffer. The floodplain consists primarily of immature forest on the left bank and residential yard adjacent to the left bank. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S001h are on the second page of this form.

Stream Impacts S5-S001h

Photograph Taken Upstream



Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 65

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S001h | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.08

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.11473 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.56627) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	2%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	3%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40

20

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☑	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 28

Pool Depth Max = 30

30

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 4.9'/1.0' **AVERAGE BANKFULL WIDTH (meters):** 1.49

Bankfull Width Max=30

15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☑	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **25%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

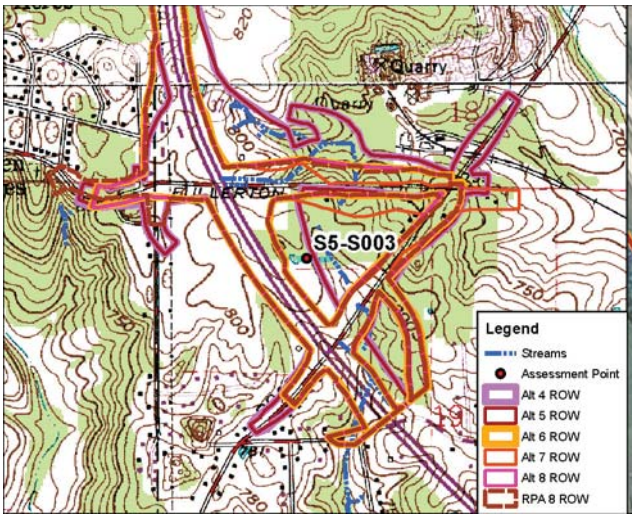
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

See Stream Assessment Form
S5-S001h for site topographic map,
aerial photograph, and resource photographs

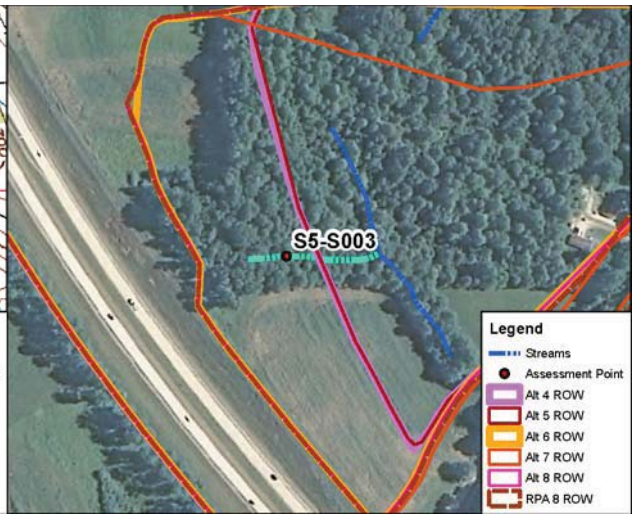
FLOW →

Save as pdf Reset Form

Stream Impacts S5-S003



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	2.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.6 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	39	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1762978 ft	**UTMN:** 14206615 ft		

Stream S5-S003 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	185	0.01	0.92
5	188	0.01	0.93
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S003 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. Along with S001a, S5-S003 is an isolated resource. The substrate is predominately sand and gravel. There is a moderately wide riparian buffer associated with this stream. The floodplain consists of mature forests on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S003 are on the second page of this form.

Stream Impacts S5-S003

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **39**

SITE NAME/LOCATION: **I-69 Section 5**

SITE NUMBER: **S5-S003** RIVER BASIN: **White River** DRAINAGE AREA (mi²): **0.01**

LENGTH OF STREAM REACH (ft): **200** LAT.: **39.12003** LONG.: _____ RIVER CODE: _____ RIVER MILE: _____

DATE: **05/12/06** SCORER: **A Rogers** COMMENTS: **(Long: -86.56786) Isolated (Natural-Class II)**

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **0.00%** (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15** **TOTAL NUMBER OF SUBSTRATE TYPES:** **4**

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☑	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **10**

Pool Depth Max = 30

15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: **OHW - 2.6' / 0.6'** **AVERAGE BANKFULL WIDTH (meters):** **0.79**

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing ☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Subsurface flow with isolated pools (Interstitial) ☐ Dry channel, no water (Ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☑ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: **37** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: **165 Upstream / 166 Downstream / 167 Right Bank / 168 Left Bank**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **50%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

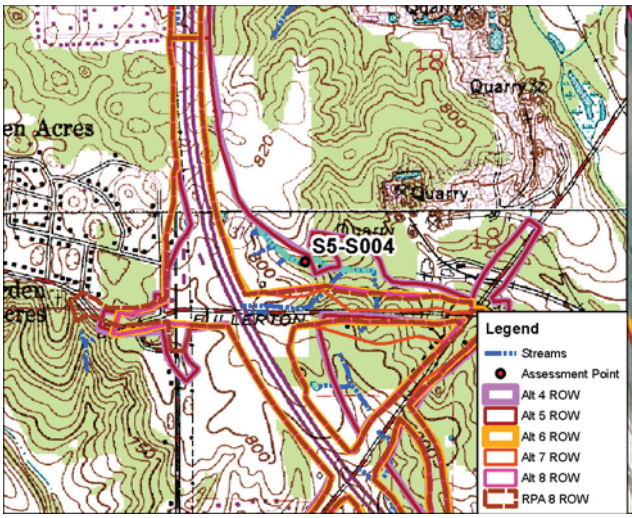
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

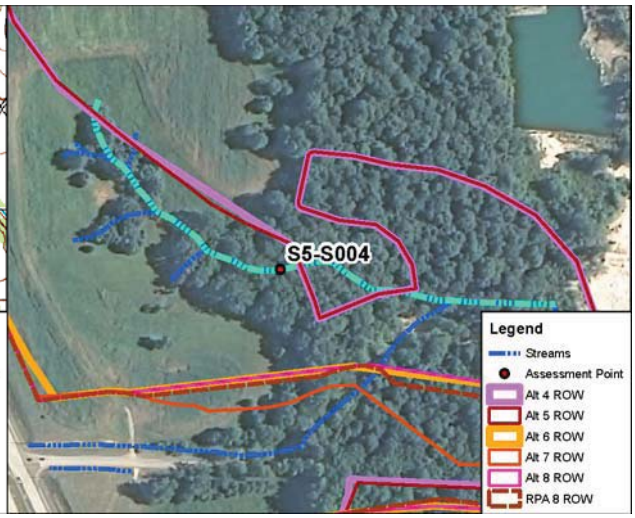
See Stream Assessment Form
S5-S003 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S004



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	3.3 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.6 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	79	**Watershed Area:**	0.05 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Bedrock
UTME: 1762978 ft	**UTMN:** 14206615 ft		

Stream S5-S004 – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	1140	0.09	4.14
5	1149	0.09	4.13
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S004 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate of is bedrock and boulder slabs. There is a narrow riparian corridor on both banks where Alternatives 4 and 5 cross this headwater stream. The floodplain consists primarily of mature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S004 are on the second page of this form.

Stream Impacts S5-S004

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 79

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S004 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.05

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.12356 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/12/06 SCORER: A Rogers COMMENTS: (Long: -86.56866) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	☑ BLDR SLABS [16 pts]	20%	☐	☐ SILT [3 pt]	5%
☐	☐ BOULDER (>256 mm) [16 pts]	0%	☐	☐ LEAF PACK/WOODY DEBRIS [3 pts]	5%
☑	☐ BEDROCK [16 pt]	55%	☐	☐ FINE DETRITUS [3 pts]	0%
☐	☐ COBBLE (65-256 mm) [12 pts]	5%	☐	☐ CLAY or HARDPAN [0 pt]	0%
☐	☐ GRAVEL (2-64 mm) [9 pts]	5%	☐	☐ MUCK [0 pts]	0%
☐	☐ SAND (<2 mm) [6 pts]	5%	☐	☐ ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 80.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 32 **TOTAL NUMBER OF SUBSTRATE TYPES:** 7

HHEI Metric Points

Substrate Max = 40: 39

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☑ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 11

Pool Depth Max = 30: 25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐ > 4.0 meters (> 13') [30 pts]	☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (<=3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS: OHW - 3.3' / 0.6' **AVERAGE BANKFULL WIDTH (meters):** 1.01

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐ Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐ Urban or Industrial
☑	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☑ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☑ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: **37** NRCS Soil Map Stream Order **1**

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: **173 Upstream / 174 Downstream / 175 Right Bank / 176 Left Bank**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **30%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

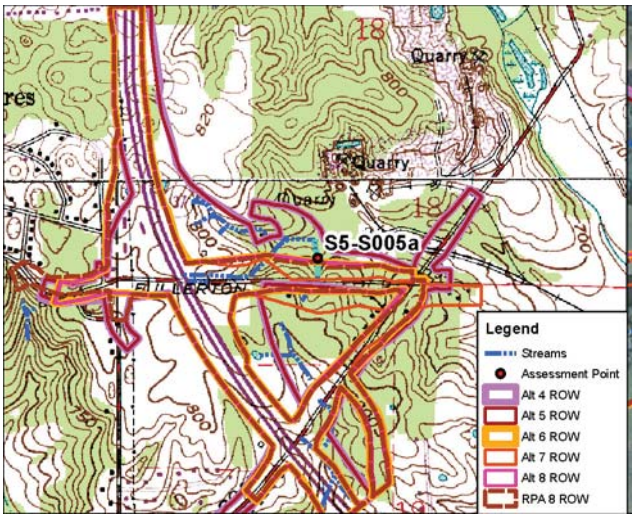
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

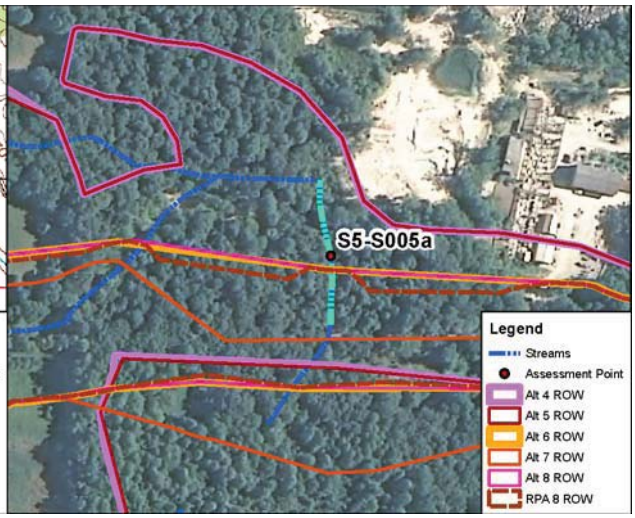
See Stream Assessment Form
S5-S004 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S005a



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	4.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	26	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/leaf pack
UTME: 1763486 ft	**UTMN:** 14207613 ft		

Stream S5-S005a – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	379	0.03	1.30
5	379	0.03	1.30
6	143	0.01	0.66
7	0	0.00	0.00
8	142	0.01	0.66
RPA 8	142	0.01	0.61

Description of Potential Impact:
Impacts to S5-S005a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate of S5-S005a is predominantly sand and leaf pack. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S005a are on the second page of this form.

Stream Impacts S5-S005a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **26**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S005a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.12276 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/10/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.56605) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	90%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40: 11

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 4' / 1' **AVERAGE BANKFULL WIDTH (meters):** 1.22

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☑ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **30%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts:

Flows only during storm events.

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

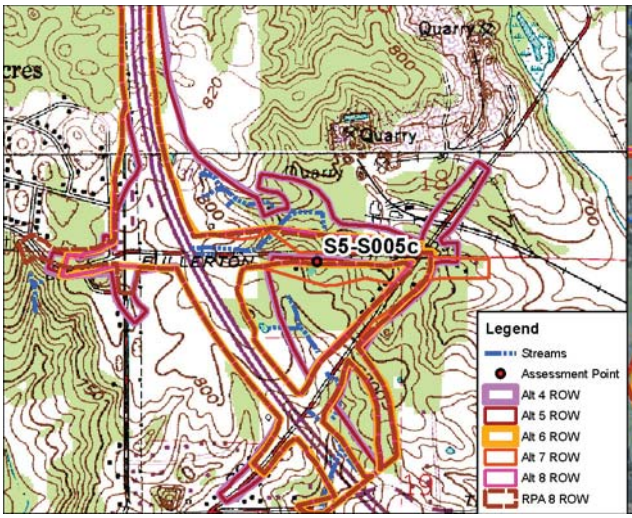
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

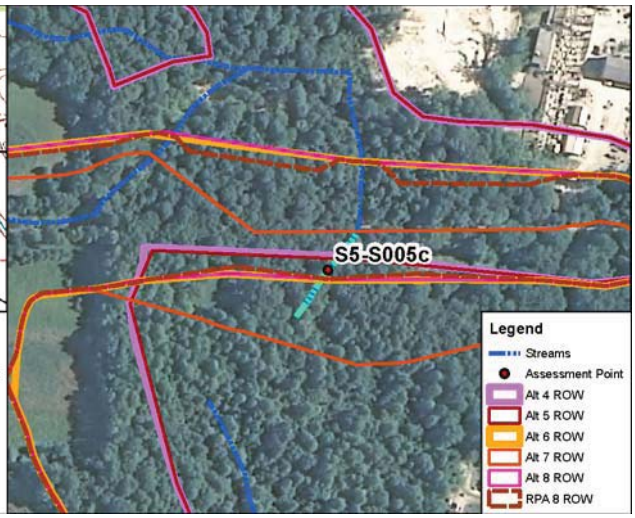
See Stream Assessment Form
S5-S005a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S005c



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	4.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	26	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/leaf pack
UTME: 1763402 ft	**UTMN:** 14207296 ft		

Stream S5-S005c – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	74	0.01	0.28
5	83	0.01	0.32
6	151	0.01	0.62
7	269	0.02	1.48
8	149	0.01	0.61
RPA 8	148	0.01	0.59

Description of Potential Impact:
Impacts to S5-S005c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate of S5-S005c is predominantly sand and leaf pack. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S005c are on the second page of this form.

Stream Impacts S5-S005c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **26**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S005c | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.12189 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/10/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.56635) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	90%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40

11

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 4' / 1' **AVERAGE BANKFULL WIDTH (meters):** 1.20

Bankfull Width Max=30

15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☑	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **30%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts:

Flows only during storm events.

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

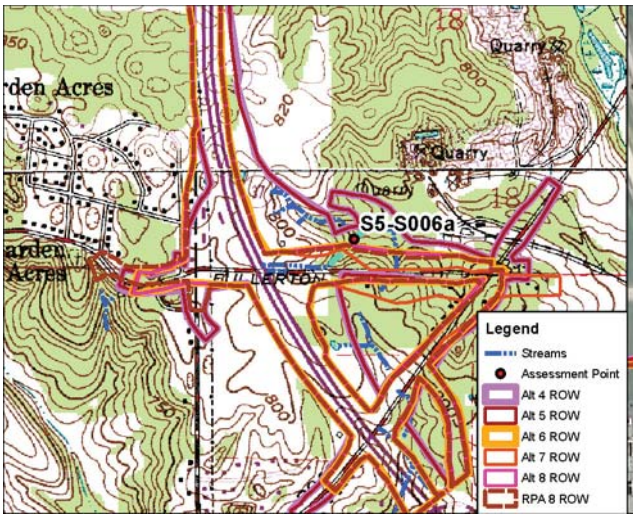
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

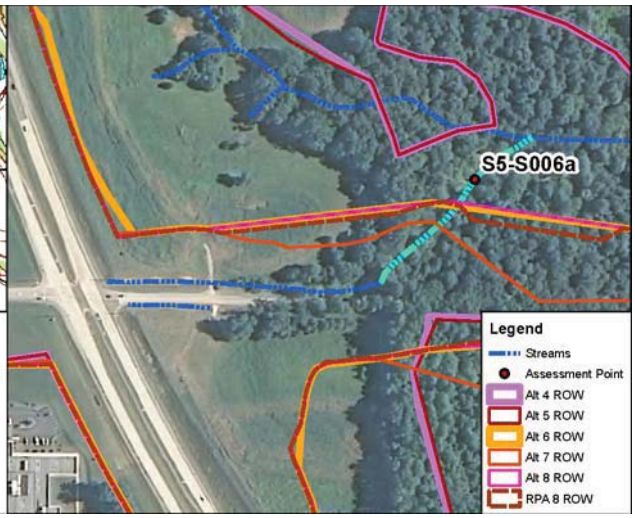
See Stream Assessment Form
S5-S005c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S006a



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	5.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	39	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1763044 ft	**UTMN:** 14207710 ft		

Stream S5-S006a – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	551	0.06	1.77
5	551	0.06	1.77
6	282	0.03	1.21
7	212	0.02	0.78
8	293	0.03	1.24
RPA 8	285	0.03	1.14

Description of Potential Impact:
Impacts to S5-S006a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate of S5-S006a is predominately sand and gravel. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S006a are on the second page of this form.

Stream Impacts S5-S006a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 39

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S006a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.12303 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/10/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.56761) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	☐ BLDR SLABS [16 pts]	0%	☐	☐ SILT [3 pt]	5%
☐	☐ BOULDER (>256 mm) [16 pts]	0%	☐	☐ LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	☐ BEDROCK [16 pt]	0%	☐	☐ FINE DETRITUS [3 pts]	0%
☐	☐ COBBLE (65-256 mm) [12 pts]	10%	☐	☐ CLAY or HARDPAN [0 pt]	0%
☐	☑ GRAVEL (2-64 mm) [9 pts]	35%	☐	☐ MUCK [0 pts]	0%
☑	☐ SAND (<2 mm) [6 pts]	50%	☐	☐ ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (<=3' 3") [5 pts]
☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS: OHW = 5' / 1' **AVERAGE BANKFULL WIDTH (meters):** 1.52

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Subsurface flow with isolated pools (Interstitial)	☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☑ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **50%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts:

Flows only during storm events.

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

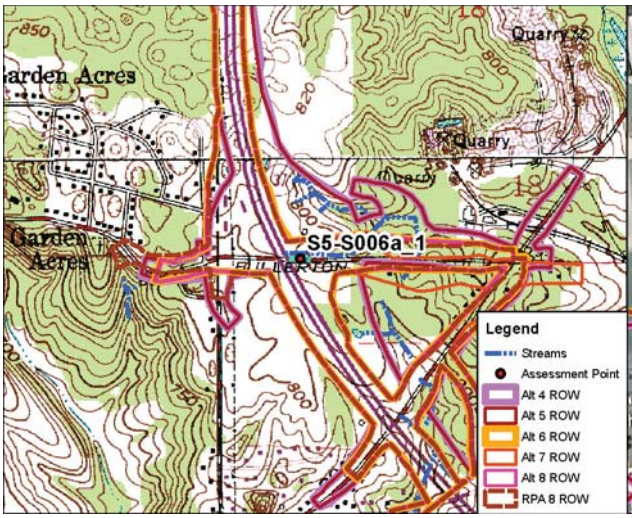
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

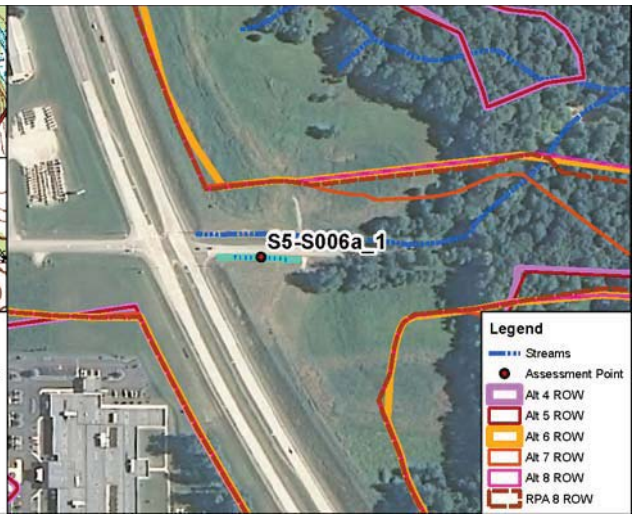
See Stream Assessment Form
S5-S006a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S006a_1



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	19
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1762257 ft	**UTMN:** 14207384 ft		

Stream S5-S006a_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	215	0.01	0.09
5	215	0.01	0.09
6	215	0.01	0.09
7	215	0.01	0.09
8	215	0.01	0.09
RPA 8	215	0.01	0.09

Description of Potential Impact:
Impacts to S5-S006a_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located along West Fullerton Pike. No outlet was identified in the field and thus, this channel shall be considered isolated. There is no riparian buffer associated with this artificial channel. The floodplain consists of the roadway on the left bank and new field on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S006a_1 are on the second page of this form.

Stream Impacts S5-S006a_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **12**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S006a_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.12215 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long:-86.57039) Isolated (Concrete Gutter-Mod Class

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 1.2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.36

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

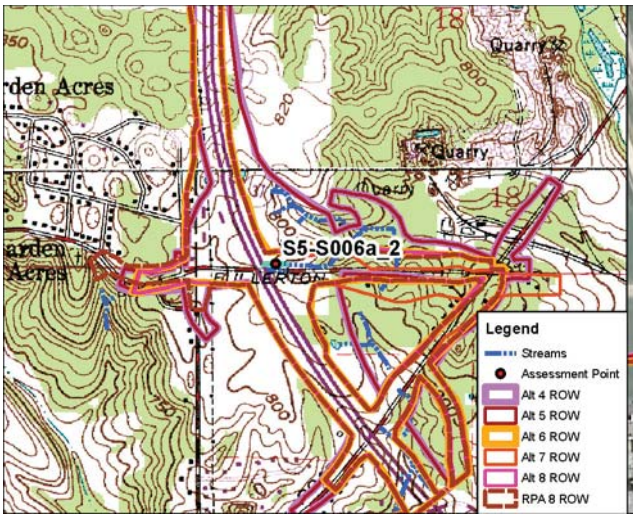
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

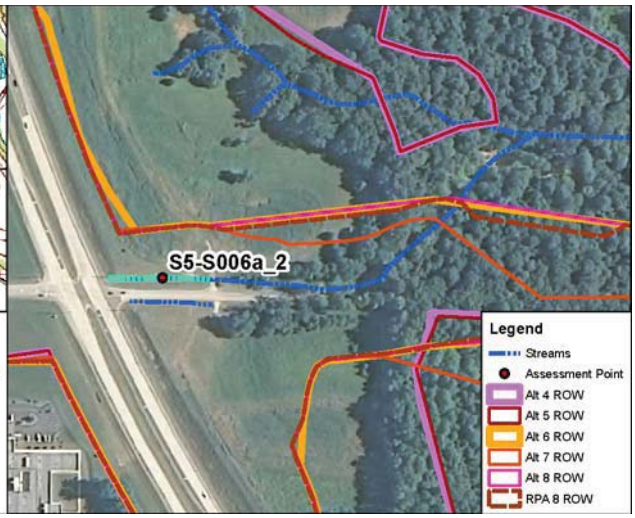
See Stream Assessment Form
S5-S006a_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S006a_2



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1762227 ft	**UTMN:** 14207446 ft		

Stream S5-S006a_2 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	261	0.01	0.00
5	261	0.01	0.00
6	261	0.01	0.00
7	261	0.01	0.00
8	261	0.01	0.00
RPA 8	261	0.01	0.00

Description of Potential Impact:
Impacts to S5-S006a_2 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located along West Fullerton Pike. This channel flows to S5-S006a_3 via a 21-foot long pipe. There is no riparian buffer associated with this artificial channel. The floodplain consists of the new field on the left bank and roadway on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S006a_1 are on the second page of this form.

Stream Impacts S5-S006a_2

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **12**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S006a_2 RIVER BASIN: White River DRAINAGE AREA (mi^2): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.12232 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long: -86.57049) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 1.2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.36

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

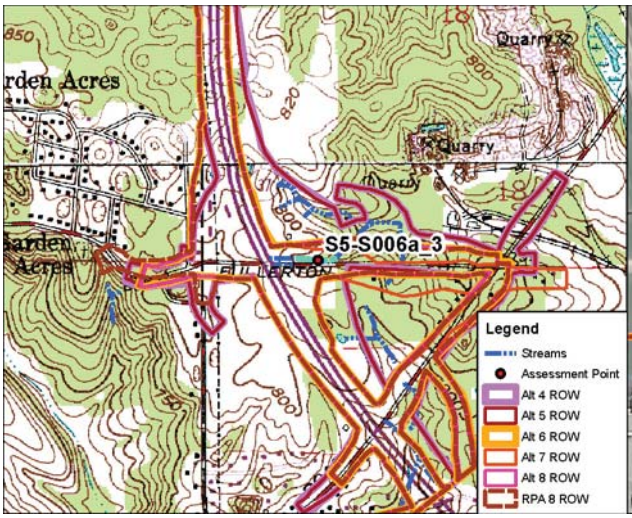
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

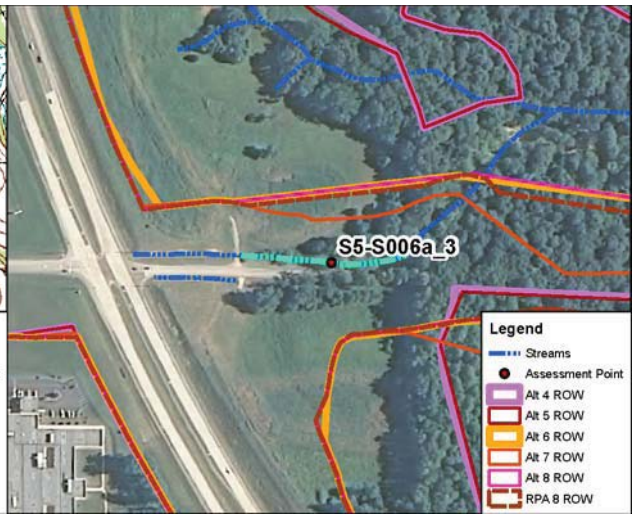
See Stream Assessment Form
S5-S006a_2 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S006a_3



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1762604 ft	**UTMN:** 14207423 ft		

Stream S5-S006a_3 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	434	0.01	0.74
5	434	0.01	0.74
6	434	0.01	0.74
7	434	0.01	0.74
8	434	0.01	0.74
RPA 8	434	0.01	0.74

Description of Potential Impact:
Impacts to S5-S006a_3 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located along West Fullerton Pike. This channel flows to S5-S006a. There is narrow riparian buffer associated with the left bank of this artificial channel. The floodplain consists of the immature forest on the left bank and roadway on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S006a_3 are on the second page of this form.

Stream Impacts S5-S006a_3

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S006a_3 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.12225 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long: -86.56916) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 1.2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.37

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☑	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.00**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **80%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

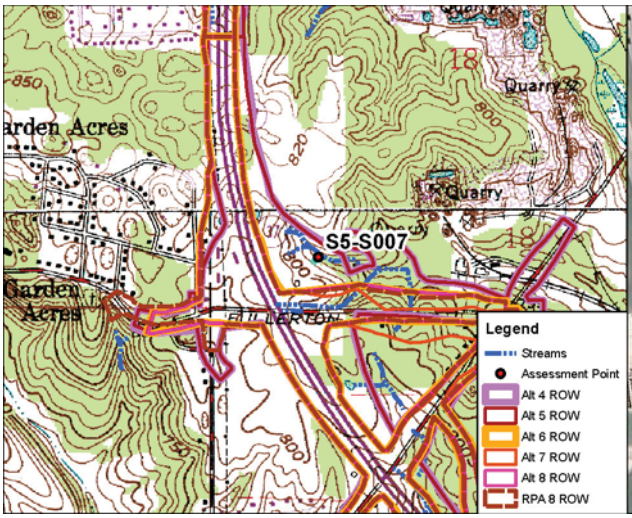
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

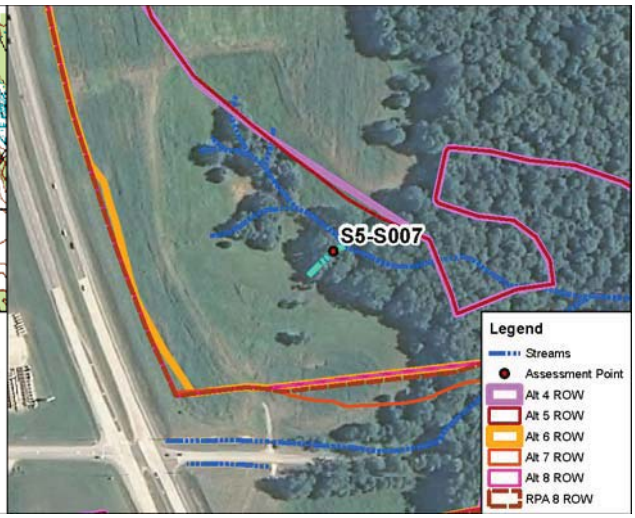
See Stream Assessment Form
S5-S006a_3 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S007



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1762524 ft	**UTMN:** 14207937 ft		

Stream S5-S007 –Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	121	0.01	0.01
5	121	0.01	0.01
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S007 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of sand and gravel. This channel flows to S5-S004. There is moderately wide riparian buffer associated with this stream. The floodplain consists of the immature forest on the left bank and roadway on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S007 are on the second page of this form.

Stream Impacts S5-S007

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S007 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 120 LAT.: 39.12366 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/12/06 SCORER: A Rogers COMMENTS: (Long: -86.56943) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%
☐	BOULDER (>256 mm) [16 pts]	0%
☐	BEDROCK [16 pt]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%
☐	SAND (<2 mm) [6 pts]	60%

TYPE		PERCENT
☐	SILT [3 pt]	5%
☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	FINE DETRITUS [3 pts]	0%
☐	CLAY or HARDPAN [0 pt]	0%
☐	MUCK [0 pts]	0%
☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 5

Pool Depth Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 1.5' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 0.50

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: **37** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **45%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

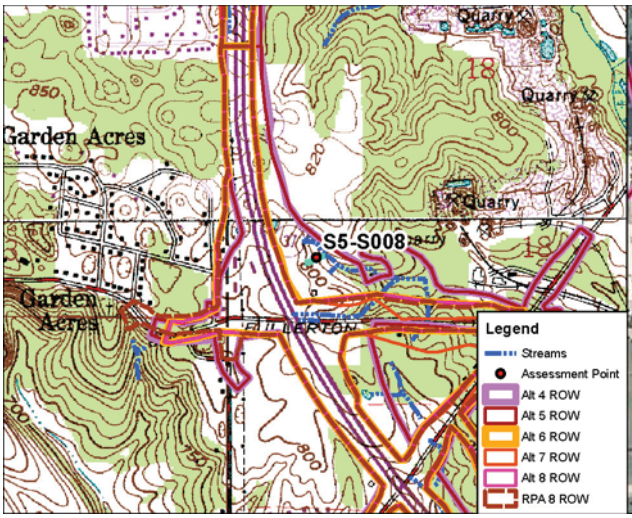
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

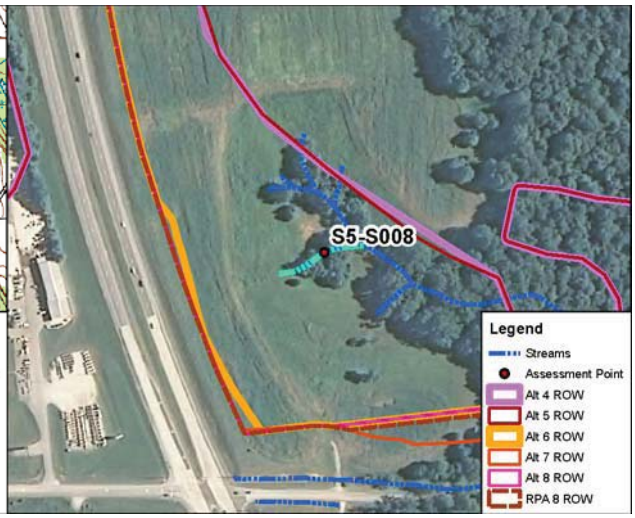
See Stream Assessment Form
S5-S007 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S008



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1762323 ft	**UTMN:** 14208032 ft		

Stream S5-S008 –Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	238	0.01	0.12
5	238	0.01	0.12
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S008 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of sand and gravel. This channel flows to S5-S004. There is a narrow riparian buffer associated with this stream. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S008 are on the second page of this form.

Stream Impacts S5-S008

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S008 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.12393 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/12/06 SCORER: A Rogers COMMENTS: (Long: -86.57014) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 4

Pool Depth Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 1.6' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 0.49

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: **37** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **75%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C)_____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N)____ Voucher? (Y/N)____ Salamanders Observed? (Y/N)____ Voucher? (Y/N)____

Frogs or Tadpoles Observed? (Y/N)____ Voucher? (Y/N)____ Aquatic Macroinvertebrates Observed? (Y/N)____ Voucher? (Y/N)____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

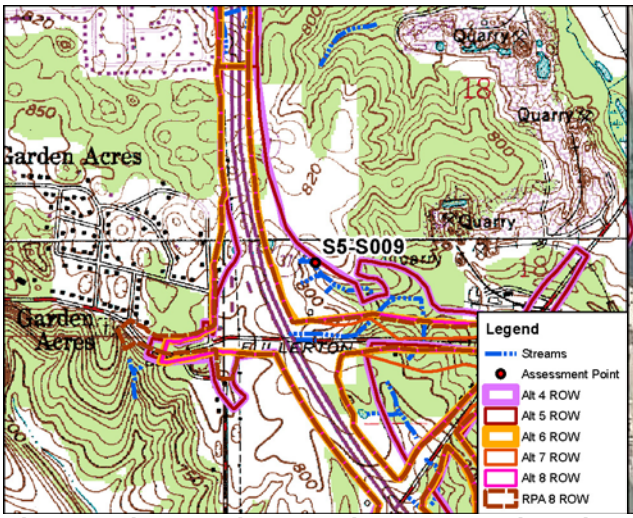
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

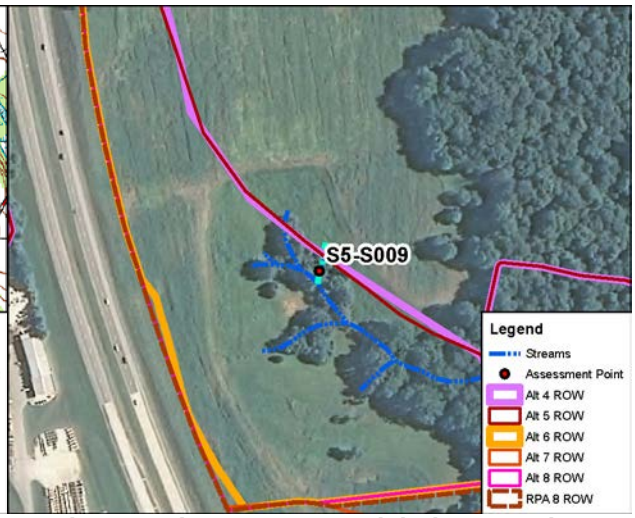
See Stream Assessment Form
S5-S008 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S009



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.1 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1762353 ft	**UTMN:** 14208185 ft		

Stream S5-S009 –Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	78	0.01	0
5	75	0.01	0
6	0	0.00	0
7	0	0.00	0
8	0	0.00	0
RPA 8	0	0.00	0

Description of Potential Impact:

Impacts to S5-S009 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of sand and gravel. This channel flows to S5-S004. There is a moderately wide riparian buffer associated with this stream. The floodplain consists of the immature forest on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S009 are on the second page of this form.

Stream Impacts S5-S009

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S009 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 109 LAT.: 39.12435 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/12/06 SCORER: A Rogers COMMENTS: (Long: -86.57003) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 3

Pool Depth Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 1.1' / 0.3' **AVERAGE BANKFULL WIDTH (meters):** 0.50

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☑ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: **37** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **50%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

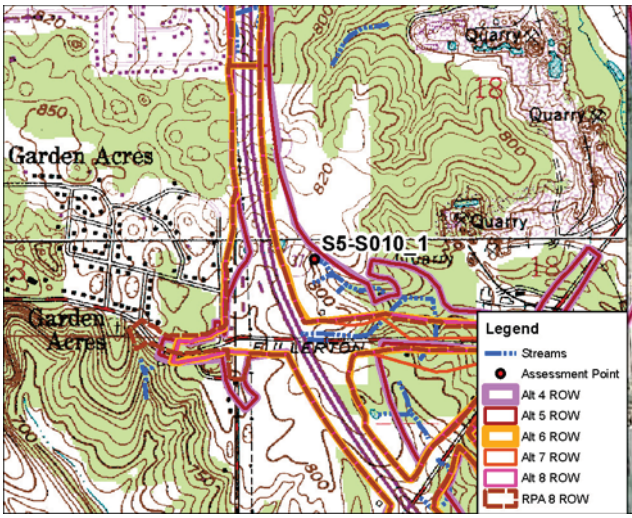
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

See Stream Assessment Form
S5-S009 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S010_1



Site Location on Clear Creek USGS Quadrangle

Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	6.8 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	32	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1762224 ft	**UTMN:** 14208217 ft		

Stream S5-S010_1 –Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	53	0.01	0.00
5	53	0.01	0.00
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S010_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and gravel. There is a moderately wide riparian corridor on this headwater stream. The floodplain consists primarily of immature forest along both banks. This stream flows to S5-S010a. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S010_1 are on the second page of this form.

Stream Impacts S5-S010_1

Photograph Taken Upstream

Photograph Taken Downstream

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **32**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S010_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 52 LAT.: 39.12444 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS COMMENTS: (Long: -86.57049) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	20%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	70%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40

12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 6.8'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 2.07

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☐	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **65%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

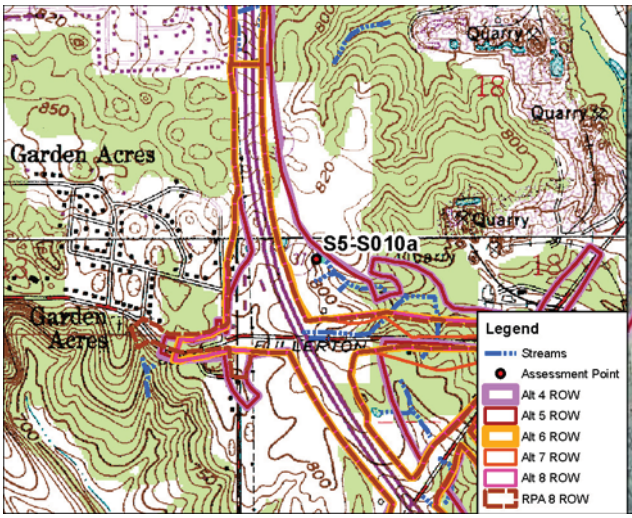
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

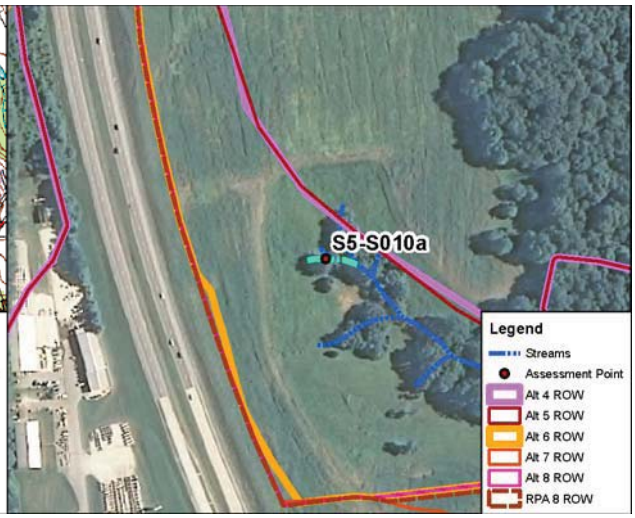
See Stream Assessment Form
S5-S010_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S010a



Site Location on Clear Creek USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Clear Creek
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.1 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	29	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1762225 ft	**UTMN:** 14208202 ft		

Stream S5-S010a –Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	131	0.01	0.00
5	131	0.01	0.00
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S010a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and gravel. There is a moderately wide riparian corridor on this headwater stream. The floodplain consists primarily of immature forest along both banks. This stream flows to S5-S004. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S010a are on the second page of this form.

Stream Impacts S5-S010a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S010a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 130 | LAT.: 39.12439 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.57048) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	60%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% **(A)** | Substrate Percentage Check: 100% **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 | **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | **MAXIMUM POOL DEPTH (centimeters):** 3

Pool Depth Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 1.1' / 0.2' | **AVERAGE BANKFULL WIDTH (meters):** 0.50

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☑	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☑ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Clear Creek** NRCS Soil Map Page: **37** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **30%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

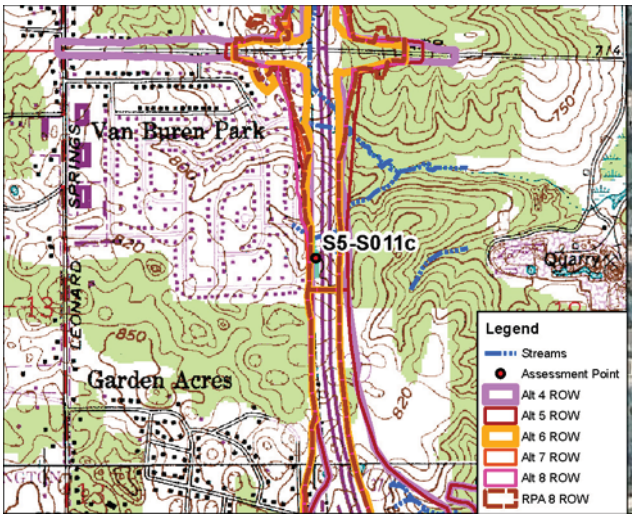
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

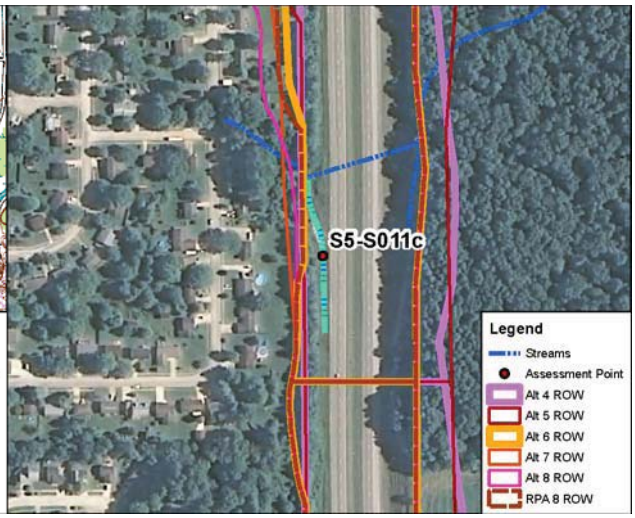
See Stream Assessment Form
S5-S010a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S011c



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	4.0 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	22	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761414 ft	**UTMN:** 14210557 ft		

Stream S5-S011c – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	410	0.04	0.44
5	410	0.04	0.43
6	410	0.04	0.46
7	410	0.04	0.48
8	410	0.04	0.48
RPA 8	410	0.04	0.47

Description of Potential Impact:
Impacts to S5-S011c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a dump rock gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of INDOT ROW on the right bank and an old field on the left. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S011c are on the second page of this form.

Stream Impacts S5-S011c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 22

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S011c RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.13087 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long: -86.57330) (Dump Rock Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 4'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 1.22

Bankfull Width Max=30

15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

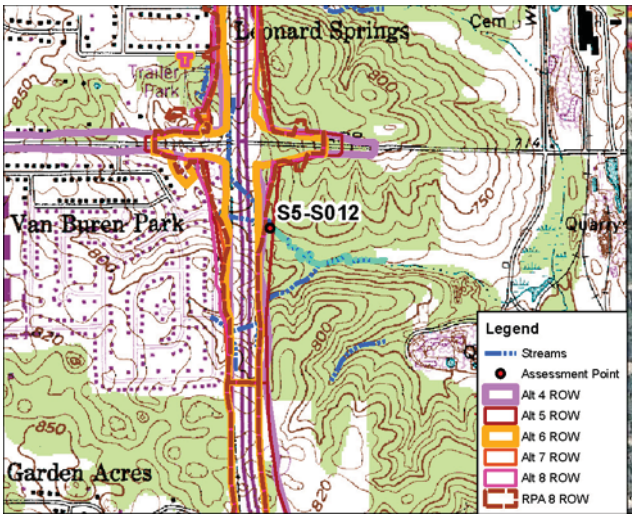
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

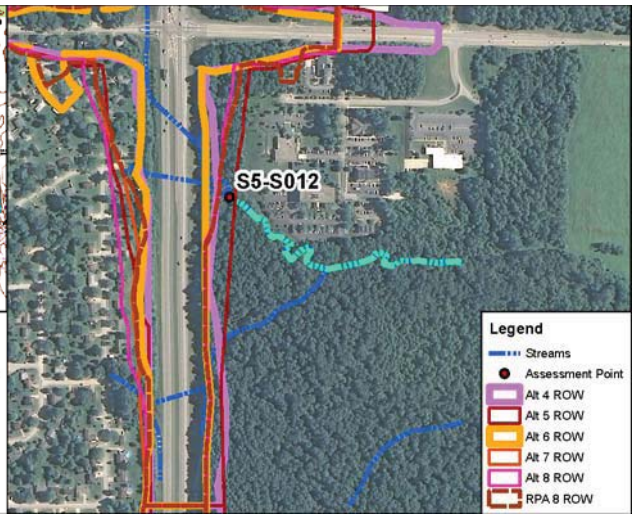
See Stream Assessment Form
S5-S011c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S012



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	4.9 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.9 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	70	**Watershed Area:**	0.24 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Bedrock/gravel
UTME: 1761778 ft	**UTMN:** 14211833 ft		

Stream S5-S012– Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	0	0.00	0.14
5	58	0.01	0.62
6	0	0.00	0.00
7	0	0.00	0.16
8	0	0.00	0.17
RPA 8	0	0.00	0.19

Description of Potential Impact:
Impacts to S5-S012 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of a fairly even mix of bedrock, cobble, gravel, and sand. There is a wide riparian corridor where Alternative 5 crosses this creek. The floodplain consists primarily of mature forest on both banks of the stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S012 are on the second page of this form.

Stream Impacts S5-S012

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 70

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S012 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.24

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.13437 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/12/06 SCORER: J Meeker COMMENTS: (Long: -86.57200) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☑	BEDROCK [16 pt]	30%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	20%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	25%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	20%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 50.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40

30

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☑	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 18

Pool Depth Max = 30

25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 4.9' / 0.9' **AVERAGE BANKFULL WIDTH (meters):** 1.49

Bankfull Width Max=30

15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☑	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **37** NRCS Soil Map Stream Order **2**

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: **185 Upstream / 186 Downstream / 187 Right bank / 188 Left bank**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **60%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

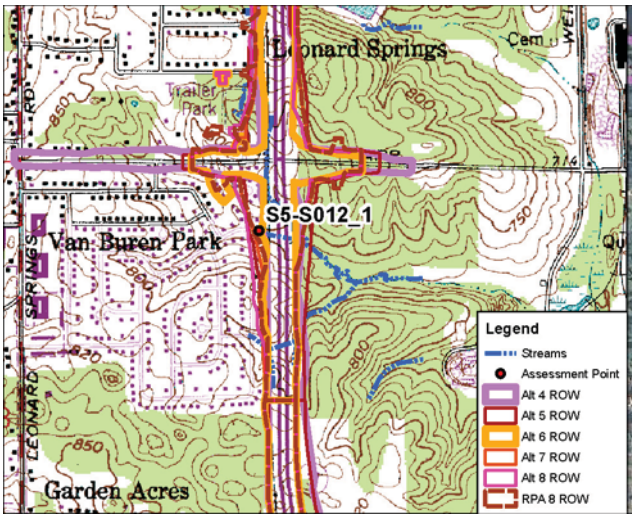
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

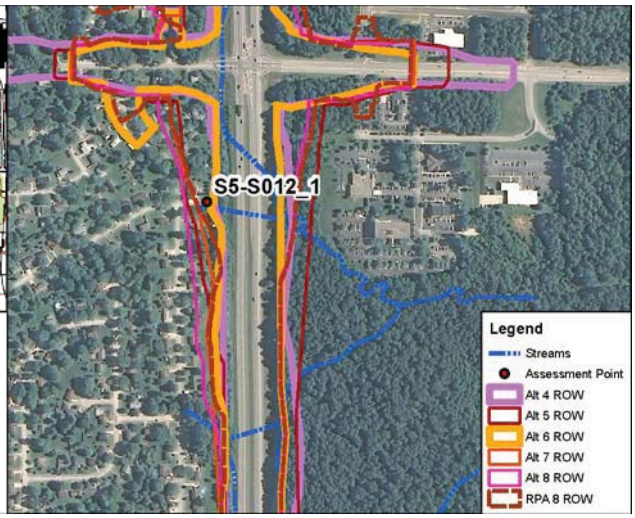
See Stream Assessment Form
S5-S012 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S012_1



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	13
Quarter:	NE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	4.0 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	0.8 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	22	**Watershed Area:**	0.24 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761271 ft	**UTMN:** 14211995 ft		

Stream S5-S012_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	0	0.00	0.00
5	36	0.01	0.00
6	0	0.00	0.00
7	36	0.01	0.00
8	36	0.01	0.00
RPA 8	36	0.01	0.00

Description of Potential Impact:
Impacts to S5-S012_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a dump rock gutter. There is narrow (left bank) to no (right bank) riparian buffer associated with this disturbed channel. The floodplain consists of an old field along both banks of this stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S012_1 are on the second page of this form.

Stream Impacts S5-S012_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 22

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S012_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.24

LENGTH OF STREAM REACH (ft): 36 LAT.: 39.13482 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS COMMENTS: (Long: -86.57379) (Dump Rock Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 4'/0.8' **AVERAGE BANKFULL WIDTH (meters):** 1.22

Bankfull Width Max=30

15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

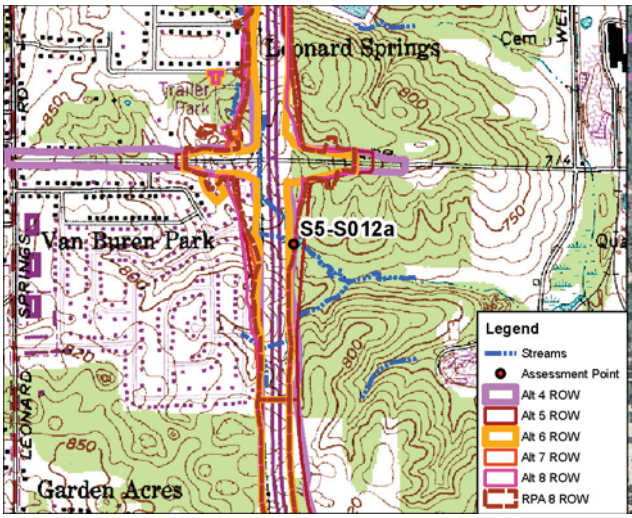
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

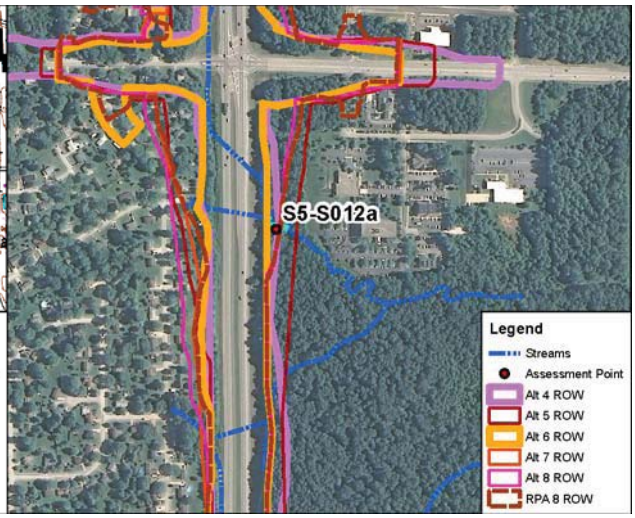
See Stream Assessment Form
S5-S012_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S012a



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	18.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.6 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	81	**Watershed Area:**	0.24 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/boulders
UTME: 1761702 ft	**UTMN:** 14211845 ft		

Stream S5-S012a – Class III PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	99	0.04	0.09
5	152	0.06	0.10
6	7	0.01	0.02
7	103	0.04	0.09
8	105	0.04	0.09
RPA 8	114	0.05	0.09

Description of Potential Impact:
Impacts to S5-S012a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists of sand, boulders, and gravel. There is a wide riparian corridor where the Alternatives cross this creek. The floodplain consists primarily of immature forest on both banks of the stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S012a are on the second page of this form.

Stream Impacts S5-S012a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 81

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S012a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.24

LENGTH OF STREAM REACH (ft): 152 | LAT.: 39.13441 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS | COMMENTS: (Long: -86.57227) (Natural-Class III)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☑	BOULDER (>256 mm) [16 pts]	21%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	19%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 31.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 22 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 26

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☑	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 11

Pool Depth Max = 30: 25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☑	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 18'/0.6' **AVERAGE BANKFULL WIDTH (meters):** 5.49

Bankfull Width Max=30: 30

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☑ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **5%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

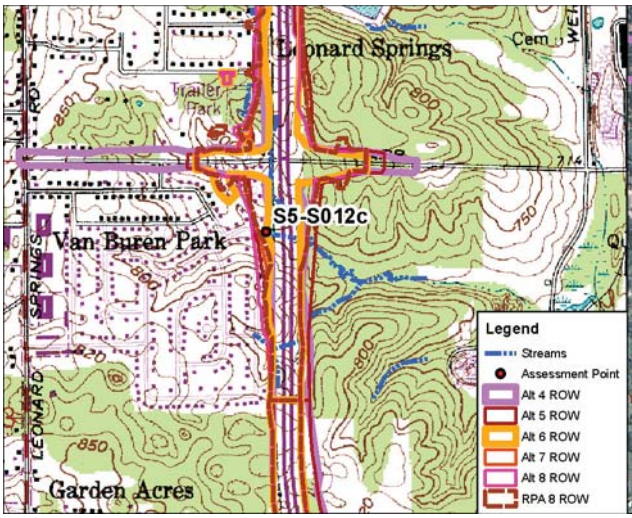
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

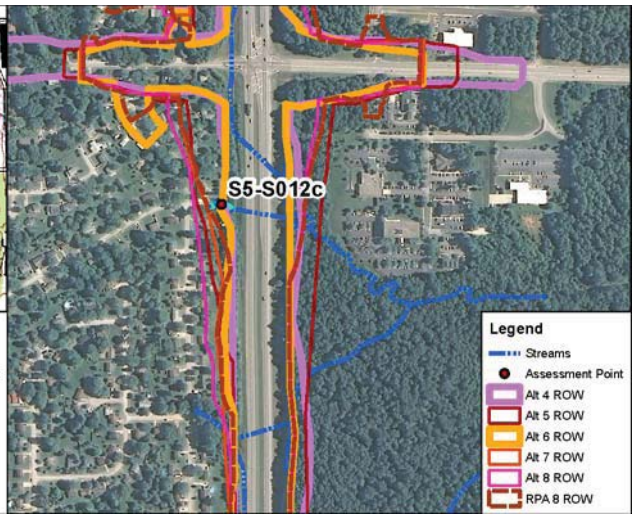
See Stream Assessment Form
S5-S012a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S012c



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	13
Quarter:	NE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	4.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	51	**Watershed Area:**	0.24 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand
UTME: 1761299 ft	**UTMN:** 14211978 ft		

Stream S5-S012c – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	45	0.01	0.09
5	126	0.01	0.09
6	56	0.01	0.09
7	126	0.01	0.09
8	126	0.01	0.09
RPA 8	126	0.01	0.09

Description of Potential Impact:
Impacts to S5-S012c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate consists primarily of sand. There is a narrow riparian corridor along the right bank and no riparian zone along the left. The floodplain consists of fragmented immature forest and disturbed shrubby habitat. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S012c are on the second page of this form.

Stream Impacts S5-S012c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 51

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S012c | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.24

LENGTH OF STREAM REACH (ft): 126 | LAT.: 39.13478 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS | COMMENTS: (Long: -86.57369) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	95%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40

11

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☑	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 16

Pool Depth Max = 30

25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 4.6'/1.3' **AVERAGE BANKFULL WIDTH (meters):** 1.40

Bankfull Width Max=30

15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **95%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

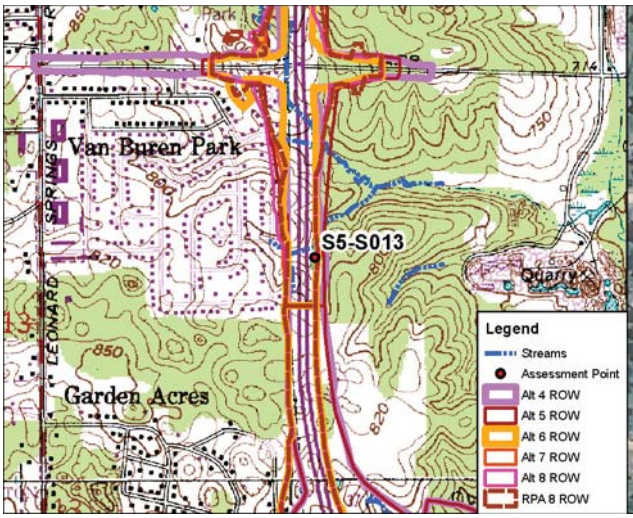
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

See Stream Assessment Form
S5-S012c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S013



Site Location on Bloomington USGS Quadrangle

Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761645 ft	**UTMN:** 14210727 ft		

Stream S5-S013 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	252	0.01	0.53
5	252	0.01	0.50
6	252	0.01	0.14
7	252	0.01	0.14
8	252	0.01	0.14
RPA 8	252	0.01	0.14

Description of Potential Impact:
Impacts to S5-S013 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with the left bank of this artificial channel. The floodplain consists of INDOT ROW on the left bank and mature forest on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S013 are on the second page of this form.

Stream Impacts S5-S013

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S013 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.13134 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long: -86.57249) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 1.2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.37

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☑	Wide >10m	☐	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.00**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **75%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

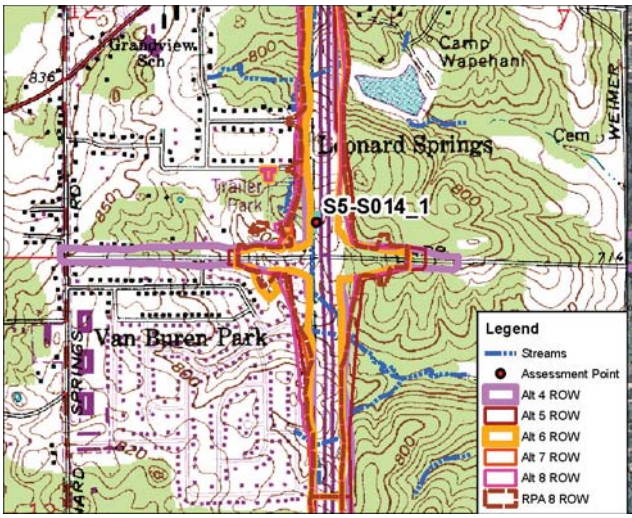
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

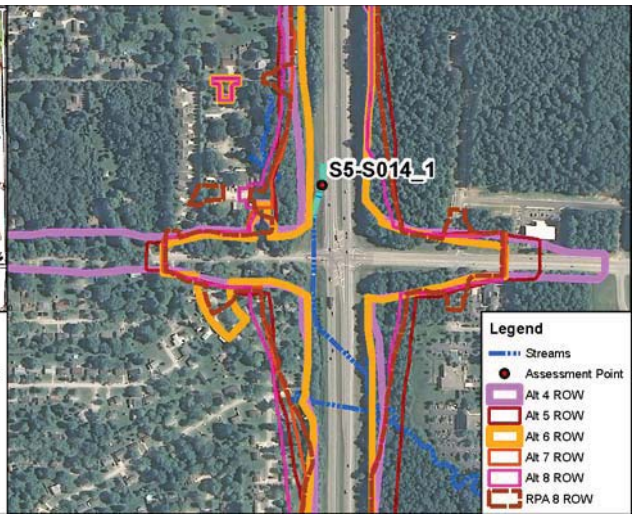
See Stream Assessment Form
S5-S013 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S014_1



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	7
Quarter:	SW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	3.1 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	0.6 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761392 ft	**UTMN:** 14213081 ft		

Stream S5-S014_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	283	0.02	0.06
5	283	0.02	0.14
6	283	0.02	0.00
7	283	0.02	0.14
8	283	0.02	0.14
RPA 8	283	0.02	0.14

Description of Potential Impact:
Impacts to S5-S014_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a dump rock gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of INDOT ROW on the left bank and new field on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S014_1 are on the second page of this form.

Stream Impacts S5-S014_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S014_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.13781 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long: -86.57334) (Dump Rock Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 3.1'/0.6' **AVERAGE BANKFULL WIDTH (meters):** 0.95

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

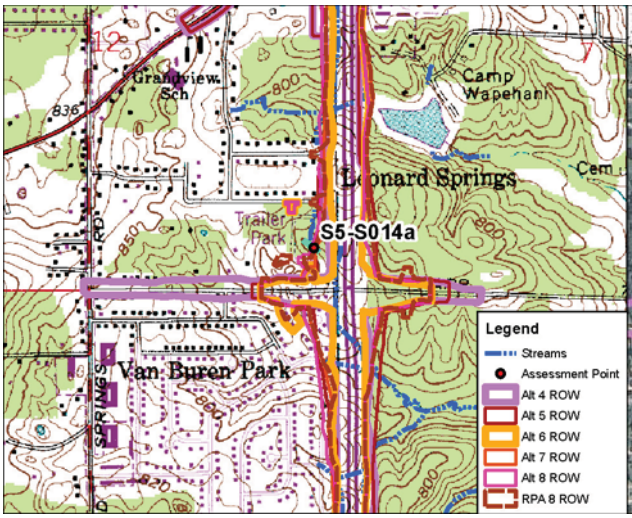
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

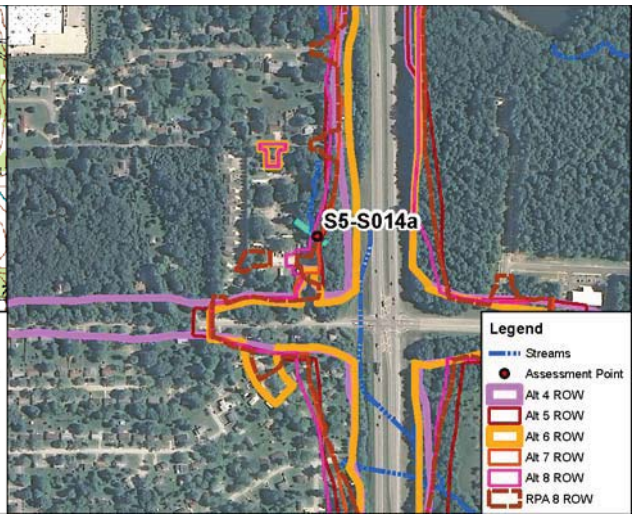
See Stream Assessment Form
S5-S014_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S014a



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	12
Quarter:	SE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	18.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.3 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	48	**Watershed Area:**	0.07 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1761123 ft	**UTMN:** 14213157 ft		

Stream S5-S014a – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	0	0.00	0.00
5	35	0.01	0.55
6	0	0.00	0.00
7	46	0.02	0.57
8	91	0.04	0.80
RPA 8	54	0.02	0.66

Description of Potential Impact:
Impacts to S5-S014a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and gravel. There is a wide riparian corridor on the left bank and a moderately wide riparian zone on the left bank where Alternatives 5, 7, Preferred Alternative 8, and RPA 8 cross this headwater stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S014a are on the second page of this form.

Stream Impacts S5-S014a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 48

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S014a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.07

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.13802 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS | COMMENTS: (Long: -86.57429) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	20%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	65%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☑	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 18'/0.3' **AVERAGE BANKFULL WIDTH (meters):** 5.48

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

Pool Depth Max = 30: 0

Bankfull Width Max=30: 30

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☑	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek (>2 miles)** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **15%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

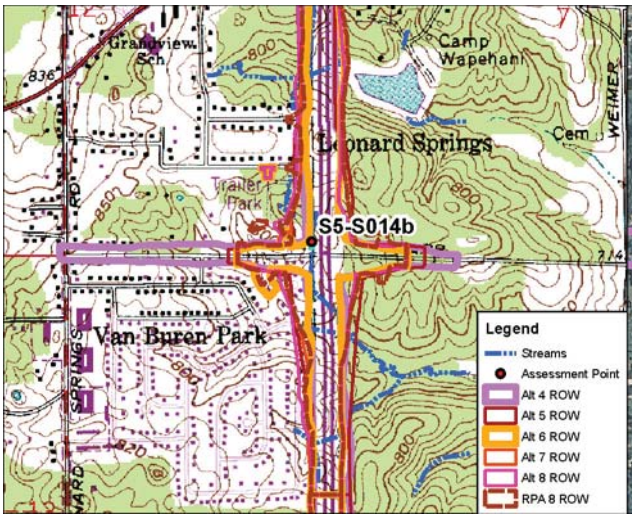
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

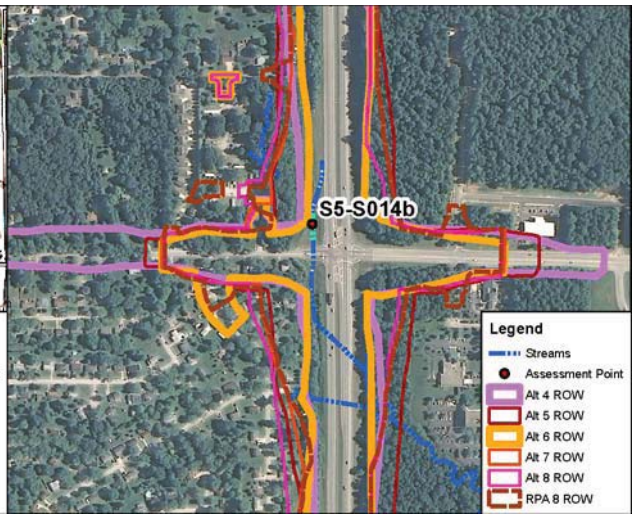
See Stream Assessment Form
S5-S014a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S014b



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	12
Quarter:	SE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.1 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.06 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761348 ft	**UTMN:** 14212859 ft		

Stream S5-S014b – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	138	0.01	0.06
5	138	0.01	0.11
6	138	0.01	0.01
7	138	0.01	0.11
8	138	0.01	0.11
RPA 8	138	0.01	0.11

Description of Potential Impact:
Impacts to S5-S014b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S014b are on the second page of this form.

Stream Impacts S5-S014b

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S014b | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.06

LENGTH OF STREAM REACH (ft): 137 | LAT.: 39.13720 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS/DEW | COMMENTS: (Long: -86.57350) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 1.1'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.34

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

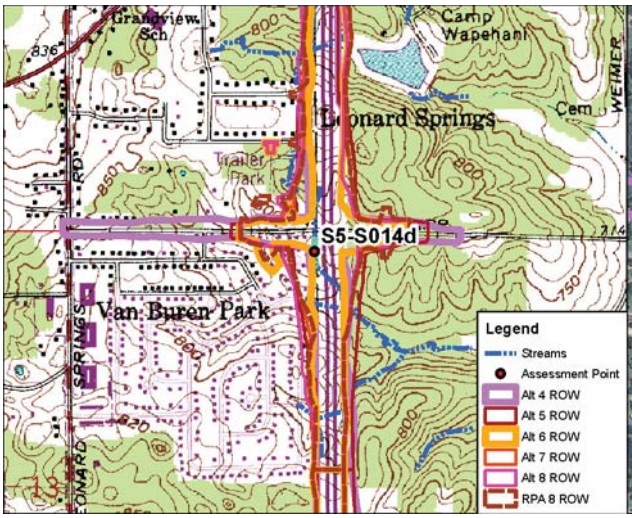
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

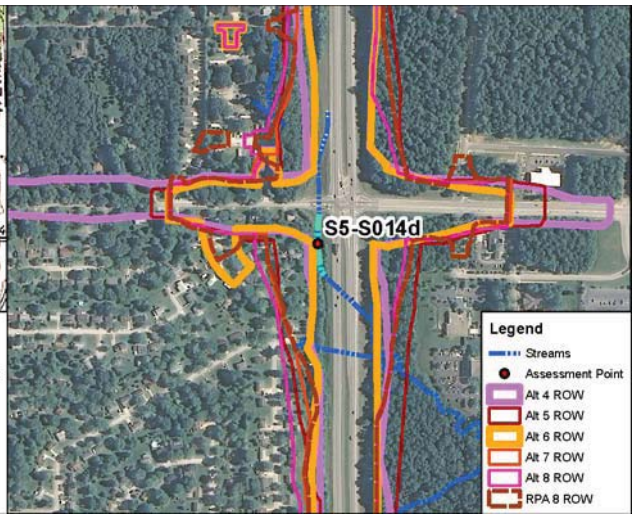
See Stream Assessment Form
S5-S014b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S014d



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	13
Quarter:	NE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	3.1 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	0.6 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.06 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761346 ft	**UTMN:** 14212499 ft		

Stream S5-S014d – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	320	0.02	0.15
5	320	0.02	0.15
6	320	0.02	0.15
7	320	0.02	0.15
8	320	0.02	0.15
RPA 8	320	0.02	0.15

Description of Potential Impact:
Impacts to S5-S014d for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a dump rock gutter. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S014d are on the second page of this form.

Stream Impacts S5-S014d

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **12**

SITE NAME/LOCATION: **I-69 Section 5**

SITE NUMBER: **S5-S014d** RIVER BASIN: **White River** DRAINAGE AREA (mi^2): **0.06**

LENGTH OF STREAM REACH (ft): **200** LAT.: **39.13621** LONG.: _____ RIVER CODE: _____ RIVER MILE: _____

DATE: **04/23/12** SCORER: **KSS/DEW** COMMENTS: **(Long: -86.57351) (Dump Rock Gutter-Modified Class I)**

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0%	☐☐	SILT [3 pt]	0%
☐☐	BOULDER (>256 mm) [16 pts]	0%	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐☐	BEDROCK [16 pt]	0%	☐☐	FINE DETRITUS [3 pts]	0%
☐☐	COBBLE (65-256 mm) [12 pts]	0%	☐☐	CLAY or HARDPAN [0 pt]	0%
☐☐	GRAVEL (2-64 mm) [9 pts]	0%	☐☐	MUCK [0 pts]	0%
☐☐	SAND (<2 mm) [6 pts]	0%	☑☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **0.00%** (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6** **TOTAL NUMBER OF SUBSTRATE TYPES:** **1**

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **0**

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: **OHW 3.1'/0.6'** **AVERAGE BANKFULL WIDTH (meters):** **0.95**

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **80%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

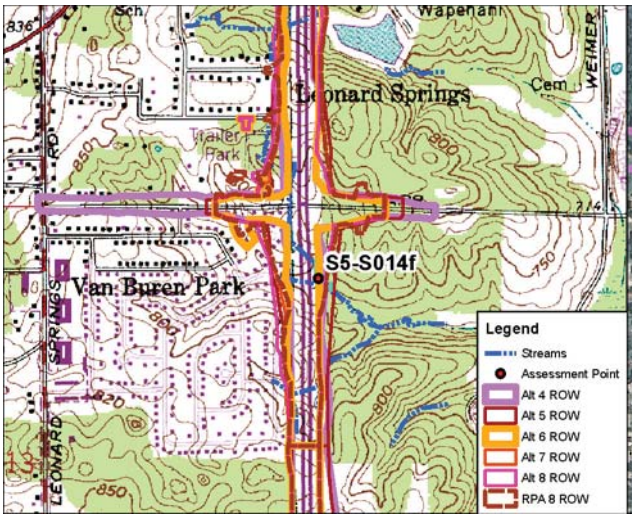
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

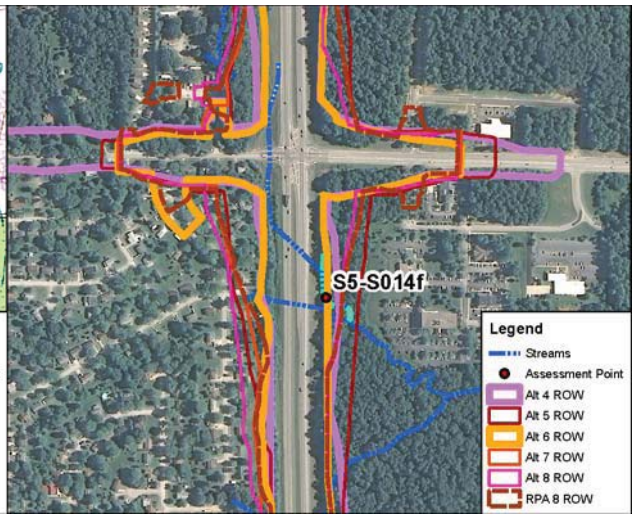
See Stream Assessment Form
S5-S014d for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S014f



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	13
Quarter:	NE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	2.3 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	54	**Watershed Area:**	0.06 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1761646 ft	**UTMN:** 14211966 ft		

Stream S5-S014f – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	318	0.02	0.71
5	440	0.02	1.07
6	243	0.01	0.26
7	332	0.02	0.94
8	331	0.02	0.94
RPA 8	335	0.02	0.94

Description of Potential Impact:
Impacts to S5-S014f for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and gravel. There is a wide riparian corridor on the left bank and a narrow riparian zone on the right bank where the Alternatives cross this stream. The adjacent floodplain consists of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S014f are on the second page of this form.

Stream Impacts S5-S014f

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 54

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S014f RIVER BASIN: White River DRAINAGE AREA (mi²): 0.06

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.13474 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS COMMENTS: (Long: -86.57246) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	20%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	45%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 20.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☑	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 26

Pool Depth Max = 30

30

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 2.3'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 0.70

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☑	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek (>2 miles)** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **10%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

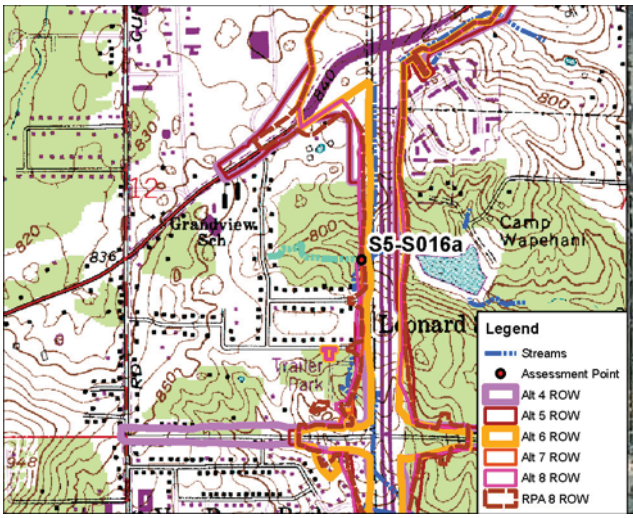
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

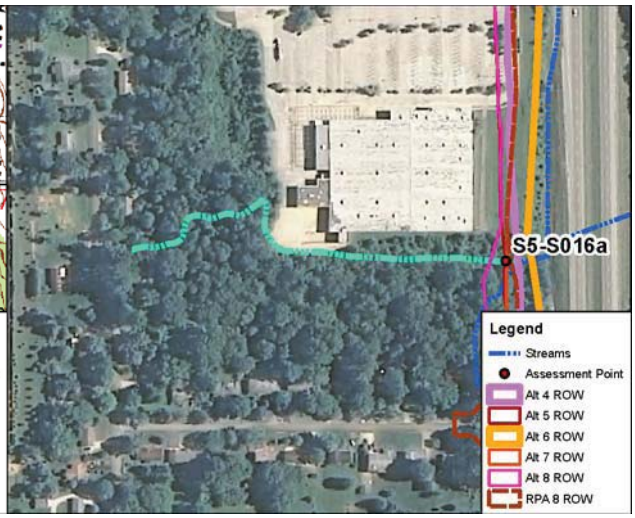
See Stream Assessment Form
S5-S014f for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S016a



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	12
Quarter:	SE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	6.0 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	28	**Watershed Area:**	0.23 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761231 ft	**UTMN:** 14214555 ft		

Stream S5-S016a – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	2	0.01	0.00
5	36	0.01	0.00
6	0	0.00	0.00
7	31	0.01	0.00
8	73	0.01	0.10
RPA 8	19	0.01	0.00

Description of Potential Impact:
Impacts to S5-S016a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The artificial channel consists of dump rock gutter located at the foot of a steep man-made embankment. This channel eventually flows to Weimer Lake (a Section 303(d) listed water). The riparian buffer is wide where the Alternatives cross this channel. The floodplain consists of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S016a are on the second page of this form.

Stream Impacts S5-S016a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **28**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S016a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.23

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.14186 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/10/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.57389) (Dump Rock Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	90%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 6' / 1' **AVERAGE BANKFULL WIDTH (meters):** 1.83

HHEI Metric Points

Substrate Max = 40	8
A + B	
Pool Depth Max = 30	0
Bankfull Width Max=30	20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **25%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

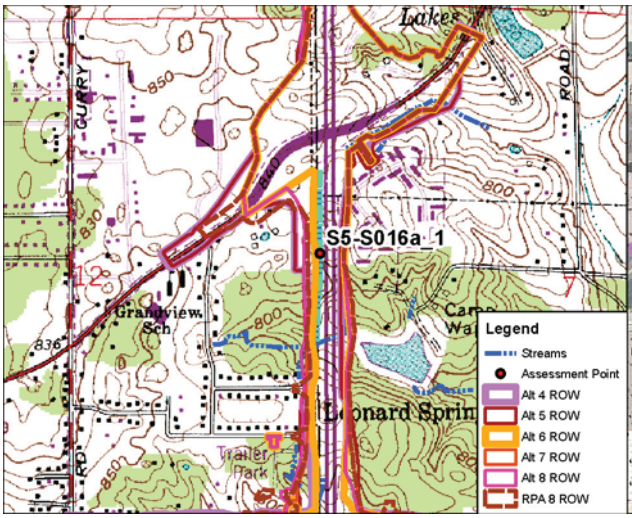
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

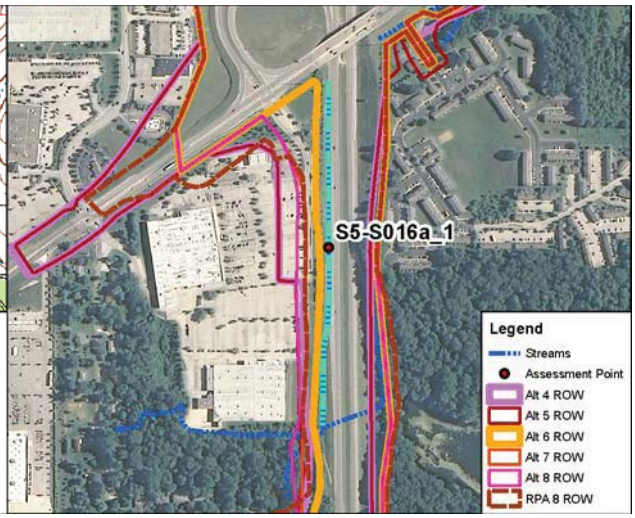
See Stream Assessment Form
S5-S016a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S016a_1



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	7
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	3.5 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761370 ft	**UTMN:** 14215533 ft		

Stream S5-S016a_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	1803	0.13	0.00
5	1803	0.13	0.00
6	1803	0.13	0.00
7	1803	0.13	0.00
8	1803	0.13	0.00
RPA 8	1803	0.13	0.00

Description of Potential Impact:
Impacts to S5-S016a_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S016a_1 are on the second page of this form.

Stream Impacts S5-S016a_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S016a_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.14454 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long: -86.57338) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 3.2'/1.0' **AVERAGE BANKFULL WIDTH (meters):** 0.98

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

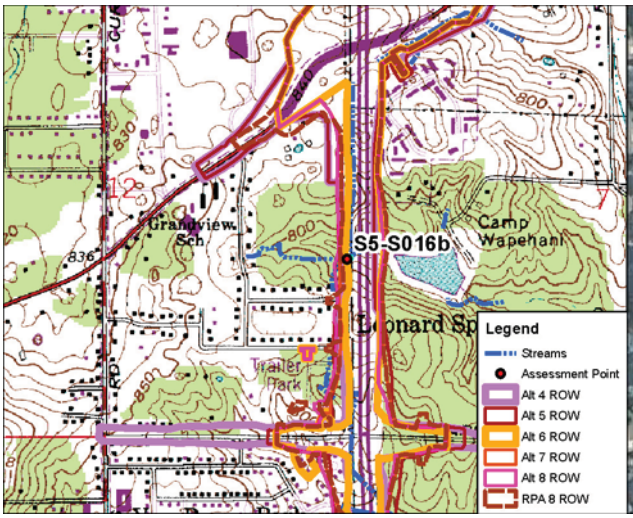
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

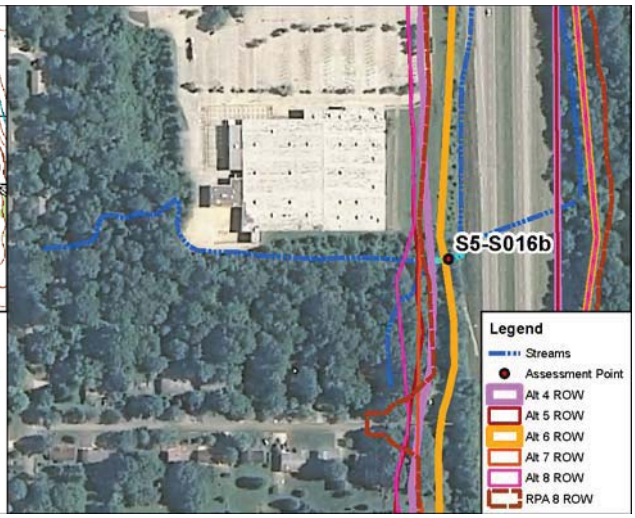
See Stream Assessment Form
S5-S016a_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S016b



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	12
Quarter:	SE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	3.5 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	12	**Watershed Area:**	0.23 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761308 ft	**UTMN:** 14214559 ft		

Stream S5-S016b – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	106	0.01	0.09
5	106	0.01	0.09
6	72	0.01	0.08
7	106	0.01	0.09
8	106	0.01	0.09
RPA 8	106	0.01	0.09

Description of Potential Impact:
Impacts to S5-S016b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter that carries flow during storm events from S5-S016a. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained utility line ROW. Photographs taken downstream in the area where these Alternatives cross S5-S016b are on the second page of this form.

Stream Impacts S5-S016b

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S016b | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.23

LENGTH OF STREAM REACH (ft): 100 | LAT.: 39.14187 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS/DEW | COMMENTS: (Long: -86.57361) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 | **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 3.2'/0.1' | **AVERAGE BANKFULL WIDTH (meters):** 0.98

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.02**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **65%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

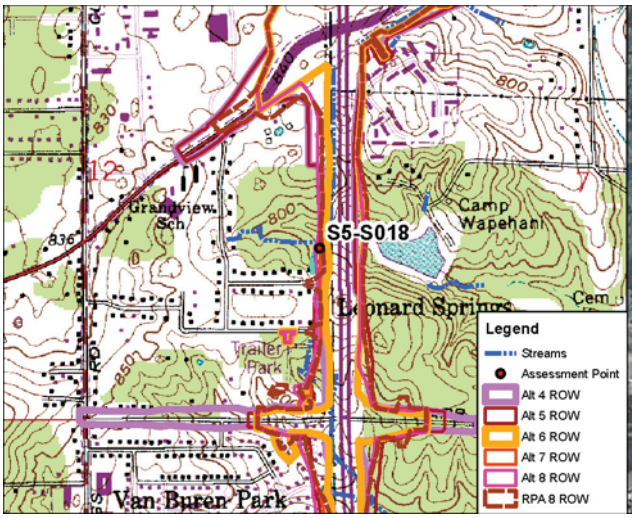
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

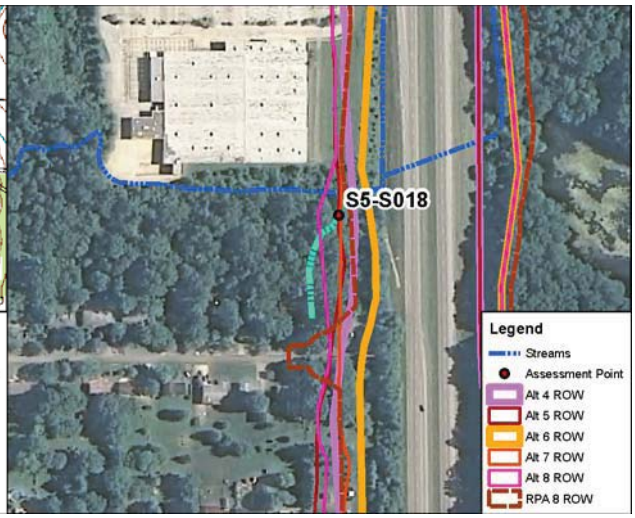
See Stream Assessment Form
S5-S016b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S018



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	12
Quarter:	SE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	3.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	26	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand
UTME: 1761226 ft	**UTMN:** 14214497 ft		

Stream S5-S018 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	0	0.00	0.01
5	60	0.01	0.01
6	0	0.00	0.01
7	45	0.01	0.01
8	140	0.01	0.19
RPA 8	8	0.01	0.01

Description of Potential Impact:
Impacts to S5-S018 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate of S5-S006a is primarily of sand. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of immature forest and an old field where it enters the utility line ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S018 are on the second page of this form.

Stream Impacts S5-S018

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **26**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S018 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.14170 LONG.: RIVER CODE: RIVER MILE:

DATE: 10/10/11 SCORER: DEW/KSS COMMENTS: (Long: -86.57390) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65-256 mm) [12 pts]	15%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	75%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 15.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 18 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40

21

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 3' / 0.5' **AVERAGE BANKFULL WIDTH (meters):** 1.00

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☑	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **5%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

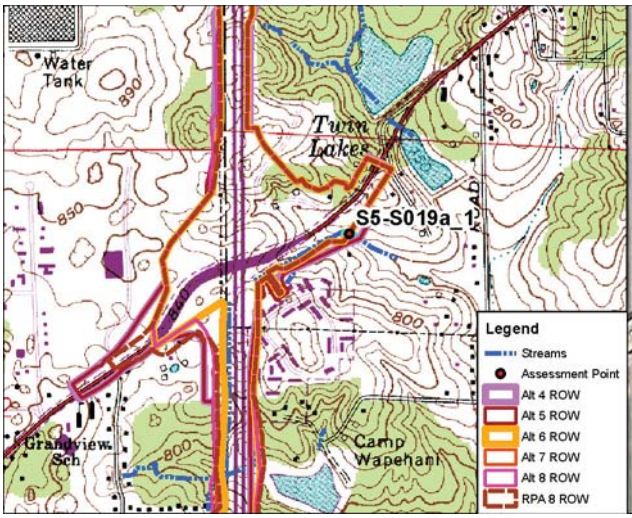
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

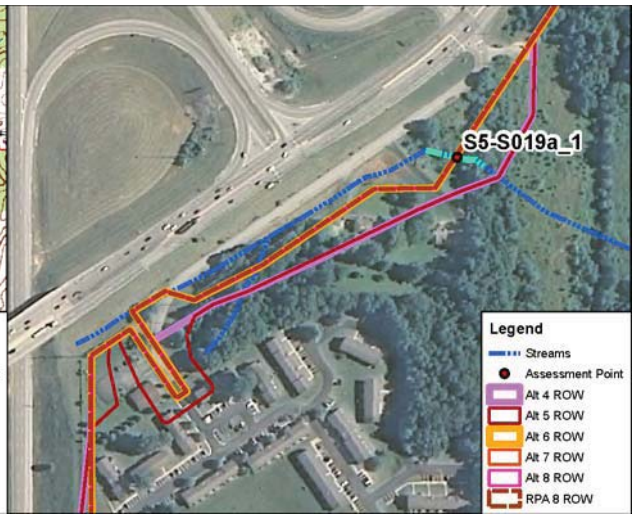
See Stream Assessment Form
S5-S018 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S019a_1



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	7
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	9.5 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.8 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	56	**Watershed Area:**	0.14 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/artificial
UTME: 1762619 ft	**UTMN:** 14217104 ft		

Stream S5-S019a_1 – Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	159	0.03	0.07
5	159	0.03	0.07
6	79	0.02	0.00
7	79	0.02	0.00
8	79	0.02	0.00
RPA 8	79	0.02	0.00

Description of Potential Impact:
Impacts to S5-S019a_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The stream channel consists of natural sand bottom and riprap lines banks. There is a narrow riparian buffer associated with both banks where the Alternatives cross this ditch. A residential yard comprises the right floodplain area, while shrubby habitat exists on the left. This stream flows into a culvert outside the study limits. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S019a_1 are on the second page of this form.

Stream Impacts S5-S019a_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 56

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S019a_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.14

LENGTH OF STREAM REACH (ft): 158 LAT.: 39.14884 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS COMMENTS: (Long: -86.56895) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	60%	☑	ARTIFICIAL [3 pts]	40%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40: 11

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☑	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 15

Pool Depth Max = 30: 25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 9.5'/0.8' **AVERAGE BANKFULL WIDTH (meters):** 3.00

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☑	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek (>2 miles)** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **80%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

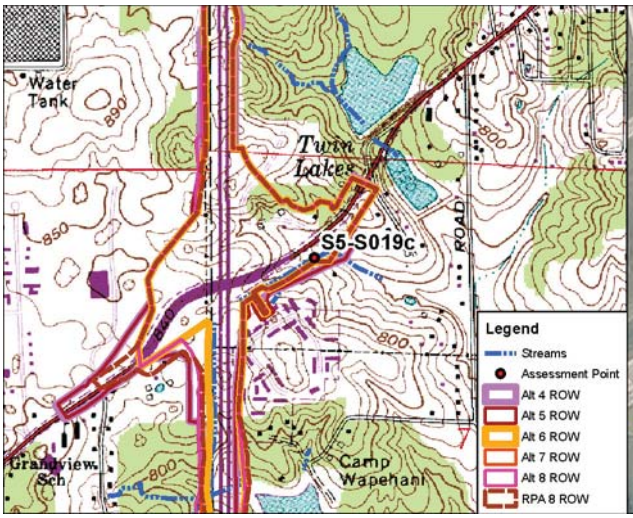
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

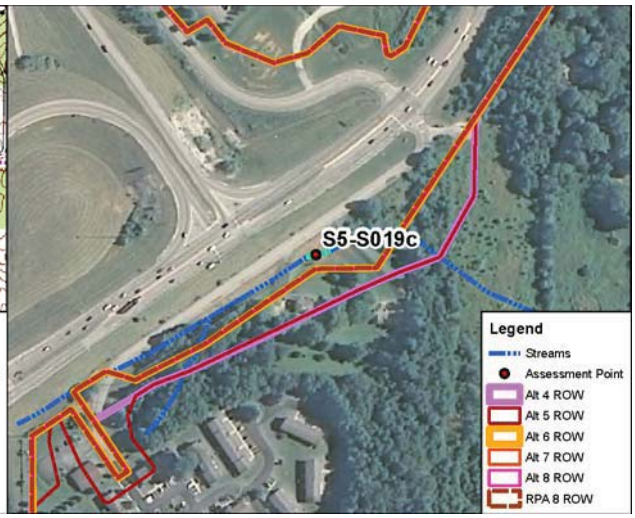
See Stream Assessment Form
S5-S019a_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S019c



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	7
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.5 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	34	**Watershed Area:**	0.14 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Clay
UTME: 1762405 ft	**UTMN:** 14217059 ft		

Stream S5-S019c – Modified Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	64	0.01	0.00
5	64	0.01	0.00
6	64	0.01	0.00
7	64	0.01	0.00
8	64	0.01	0.00
RPA 8	64	0.01	0.00

Description of Potential Impact:
Impacts to S5-S019c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. This segment of stream is captured by a roadside ditch that eventually flows along Oakdale Drive to an unnamed tributary to Clear Creek (i.e., S5-S019a). Flow is interrupted by a number of culverts under driveways, as well as under Oakdale Drive. There is no riparian buffer associated with this clay bottom ditch. The floodplain consists of the urban roadway on the left bank and residential on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S019c are on the second page of this form.

Stream Impacts S5-S019c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **34**

SITE NAME/LOCATION: **I-69 Section 5**

SITE NUMBER: **S5-S019c** RIVER BASIN: **White River** DRAINAGE AREA (mi^2): **0.14**

LENGTH OF STREAM REACH (ft): **65** LAT.: **39.14872** LONG.: _____ RIVER CODE: _____ RIVER MILE: _____

DATE: **05/12/06** SCORER: **A Rogers** COMMENTS: **(Long: -86.56970) (Roadside Ditch-Modified Class II)**

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	70%
☑	GRAVEL (2-64 mm) [9 pts]	15%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	5%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **0.00%** (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **9** **TOTAL NUMBER OF SUBSTRATE TYPES:** **5**

HHEI Metric Points

Substrate Max = 40

14

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☑	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **6**

Pool Depth Max = 30

15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: **OHW - 1.5' / 0.4'** **AVERAGE BANKFULL WIDTH (meters):** **0.45**

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **32** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: **153 Upstream / 154 Downstream / 155 Right Bank / 156 Left Bank**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **80%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

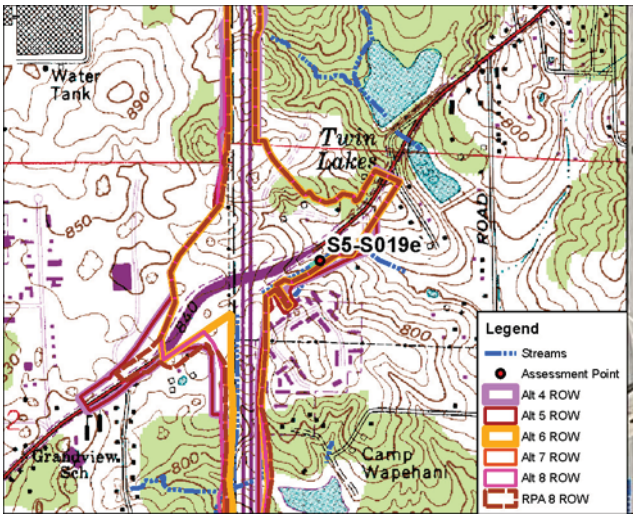
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

See Stream Assessment Form
S5-S019c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S019e



Site Location on Bloomington USGS Quadrangle

Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	7
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.5 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	12	**Watershed Area:**	0.14 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1762231 ft	**UTMN:** 14216958 ft		

Stream S5-S019e – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	184	0.01	0.14
5	184	0.01	0.14
6	184	0.01	0.04
7	184	0.01	0.04
8	184	0.01	0.04
RPA 8	184	0.01	0.04

Description of Potential Impact:
Impacts to S5-S019e for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. This segment of stream is captured by a concrete gutter that eventually flows along Oakdale Drive to an unnamed tributary to Clear Creek (i.e., S5-S019a). Flow is interrupted by a number of culverts under driveways, as well as under Oakdale Drive. The predominant substrate is artificial. There is no riparian buffer along the left bank and a moderately wide riparian zone on the right bank of this ditch. The floodplain consists of the urban roadway on the left bank and residential on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S019e are on the second page of this form.

Stream Impacts S5-S019e

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S019e | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.14

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.14844 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.57032) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 1.5' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 0.45

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☑	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **32** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: **153 Upstream / 154 Downstream / 155 Right Bank / 156 Left Bank**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **80%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

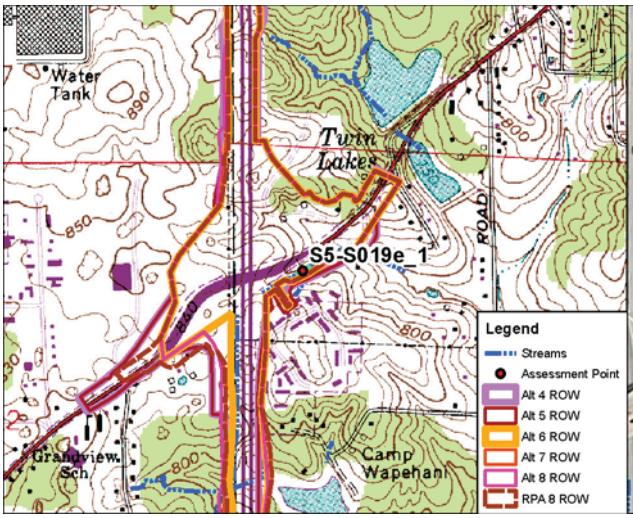
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

See Stream Assessment Form
S5-S019e for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S019e_1



Site Location on Bloomington USGS Quadrangle

Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	7
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.5 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.14 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1762054 ft	**UTMN:** 14216853 ft		

Stream S5-S019e_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	167	0.01	0.32
5	167	0.01	0.32
6	167	0.01	0.15
7	167	0.01	0.15
8	167	0.01	0.15
RPA 8	167	0.01	0.15

Description of Potential Impact:
Impacts to S5-S019e_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. This segment of stream is captured by a concrete gutter that eventually flows along Oakdale Drive to an unnamed tributary to Clear Creek (i.e., S5-S019a). Flow is interrupted by a number of culverts under driveways, as well as under Oakdale Drive. The predominant substrate is artificial. There is no riparian buffer along the left bank and a moderately wide riparian zone on the right bank of this ditch. The floodplain consists of the urban roadway on the left bank and residential on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S019e_1 are on the second page of this form.

Stream Impacts S5-S019e_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S019e_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.14

LENGTH OF STREAM REACH (ft): 167 LAT.: 39.14816 LONG.: RIVER CODE: RIVER MILE:

DATE: 02/19/13 SCORER: DEW COMMENTS: (Long: -86.57092) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 1.5' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 0.45

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☑	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **32** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **02/19/13** Quantity: **0.02**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **80%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C)_____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N)____ Voucher? (Y/N)____ Salamanders Observed? (Y/N)____ Voucher? (Y/N)____

Frogs or Tadpoles Observed? (Y/N)____ Voucher? (Y/N)____ Aquatic Macroinvertebrates Observed? (Y/N)____ Voucher? (Y/N)____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

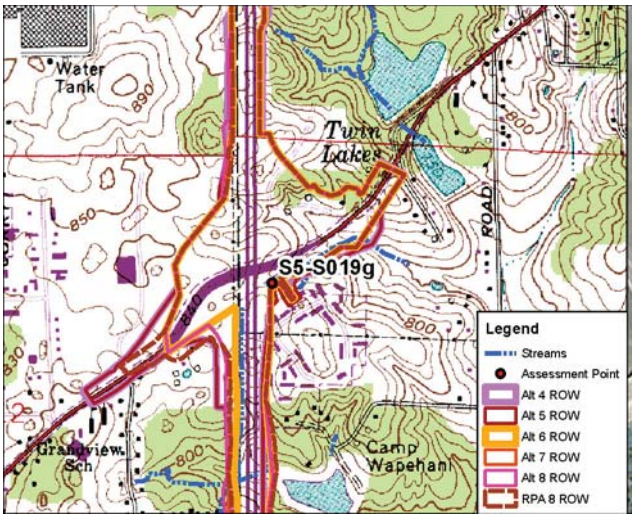
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

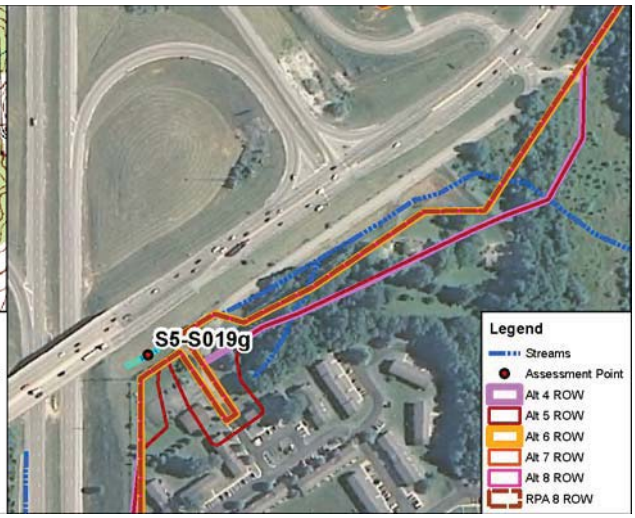
See Stream Assessment Form
S5-S019e_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S019g



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	7
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.5 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	34	**Watershed Area:**	0.14 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Clay
UTME: 1761686 ft	**UTMN:** 14216650 ft		

Stream S5-S019g – Modified Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	199	0.01	0.00
5	199	0.01	0.00
6	170	0.01	0.00
7	170	0.01	0.00
8	170	0.01	0.00
RPA 8	170	0.01	0.00

Description of Potential Impact:
Impacts to S5-S019g for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. This segment of stream is captured by a roadside ditch that eventually flows along Oakdale Drive to an unnamed tributary to Clear Creek (i.e., S5-S019a). Flow is interrupted by a number of culverts under driveways, as well as under Oakdale Drive. There is no riparian buffer associated with this clay bottom ditch. The floodplain consists of the urban roadway on the left bank and commercial on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S019g are on the second page of this form.

Stream Impacts S5-S019g

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **34**

SITE NAME/LOCATION: **I-69 Section 5**

SITE NUMBER: **S5-S019g** RIVER BASIN: **White River** DRAINAGE AREA (mi^2): **0.14**

LENGTH OF STREAM REACH (ft): **200** LAT.: **39.14760** LONG.: _____ RIVER CODE: _____ RIVER MILE: _____

DATE: **05/12/06** SCORER: **A Rogers** COMMENTS: **(Long: -86.57224) (Roadside Ditch-Modified Class II)**

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	70%
☑	GRAVEL (2-64 mm) [9 pts]	15%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	5%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **0.00%** (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **9** **TOTAL NUMBER OF SUBSTRATE TYPES:** **5**

HHEI Metric Points

Substrate Max = 40

14

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☑	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **6**

Pool Depth Max = 30

15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: **OHW - 1.5' / 0.4'** **AVERAGE BANKFULL WIDTH (meters):** **0.45**

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **32** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: **153 Upstream / 154 Downstream / 155 Right Bank / 156 Left Bank**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **80%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

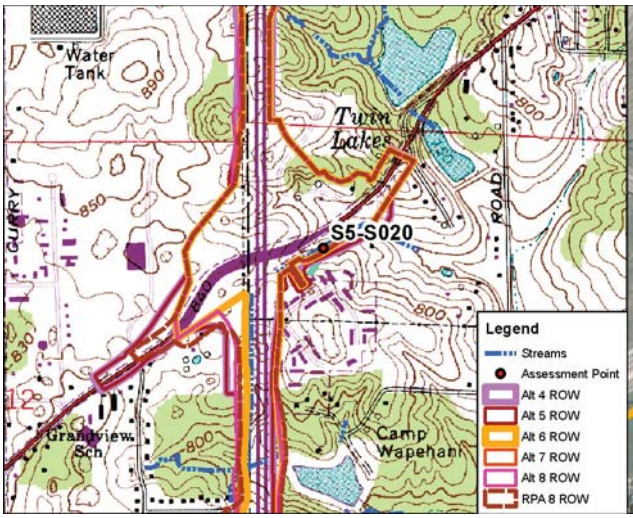
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

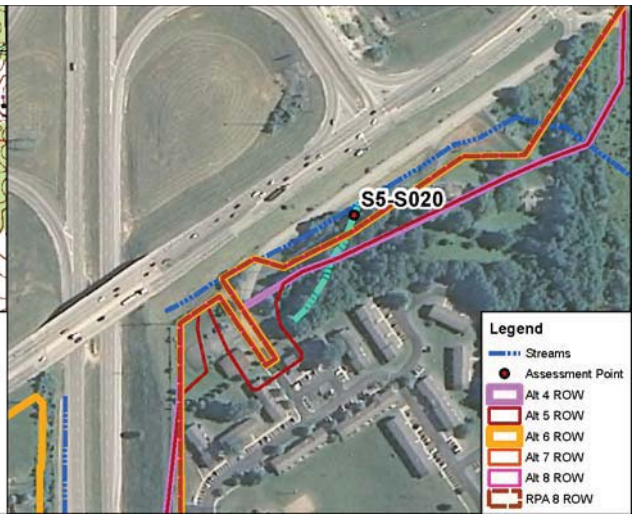
See Stream Assessment Form
S5-S019g for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S020



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	7
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.3 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	39	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1762119 ft	**UTMN:** 14216869 ft		

Stream S5-S020 – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	165	0.01	0.01
5	165	0.01	0.05
6	86	0.01	0.00
7	86	0.01	0.00
8	86	0.01	0.00
RPA 8	86	0.01	0.00

Description of Potential Impact:
Impacts to S5-S020 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate consists of sand and gravel. There is a wide riparian corridor along both banks of this stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S020 are on the second page of this form.

Stream Impacts S5-S020

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 39

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S020 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.14820 LONG.: RIVER CODE: RIVER MILE:

DATE: 05/12/06 SCORER: A Rogers COMMENTS: (Long: -86.57071) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	55%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☑	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 6

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 1.3' / 0.4' **AVERAGE BANKFULL WIDTH (meters):** 0.40

HHEI Metric Points

Substrate Max = 40	19
A + B	
Pool Depth Max = 30	15
Bankfull Width Max=30	5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **32** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **50%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C)_____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N)____ Voucher? (Y/N)____ Salamanders Observed? (Y/N)____ Voucher? (Y/N)____

Frogs or Tadpoles Observed? (Y/N)____ Voucher? (Y/N)____ Aquatic Macroinvertebrates Observed? (Y/N)____ Voucher? (Y/N)____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

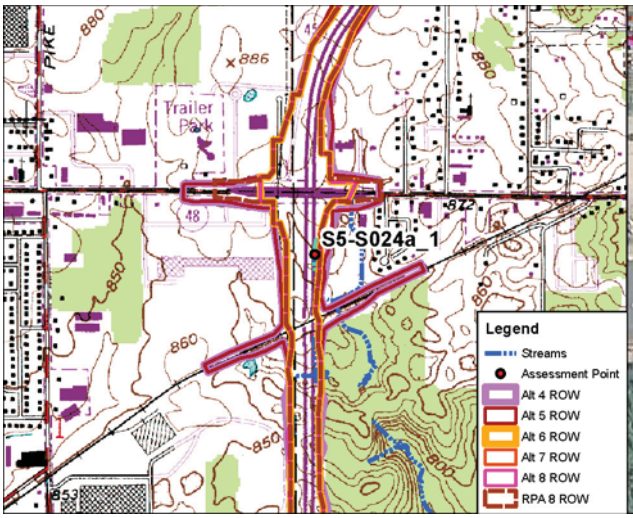
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

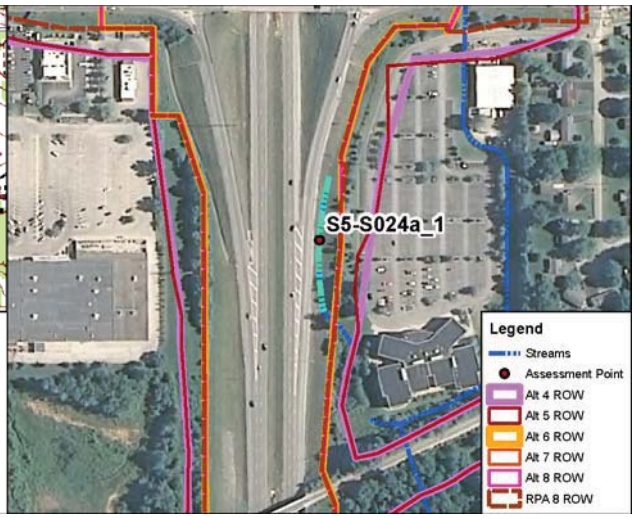
See Stream Assessment Form
S5-S020 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S024a_1



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	6
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Concrete Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	12	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1762119 ft	**UTMN:** 14216869 ft		

Stream S5-S024a_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	355	0.01	0.00
5	355	0.01	0.00
6	355	0.01	0.00
7	355	0.01	0.00
8	355	0.01	0.00
RPA 8	355	0.01	0.00

Description of Potential Impact:
Impacts to S5-S024a_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a concrete gutter located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S024a_1 are on the second page of this form.

Stream Impacts S5-S024a_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S024a_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 LAT.: 39.16278 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long: -86.57274) (Concrete Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 1.2'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 0.37

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

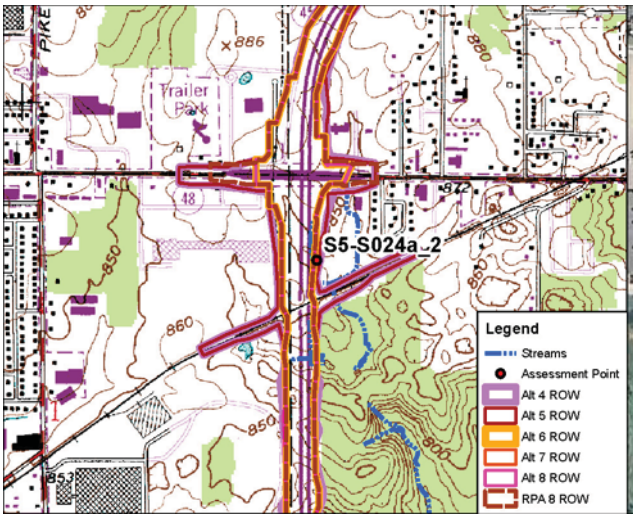
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

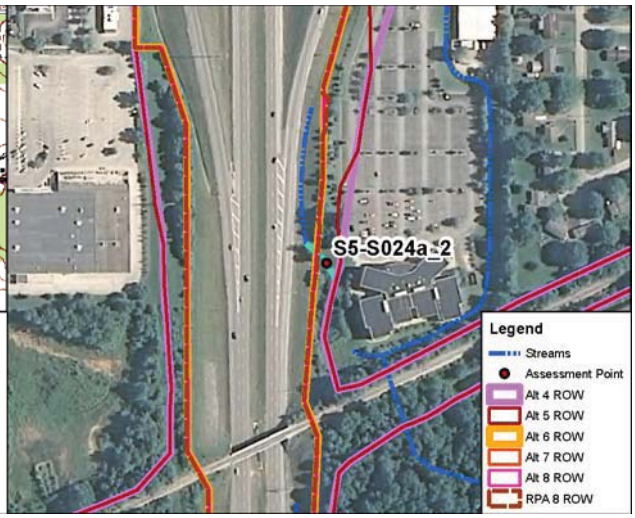
See Stream Assessment Form
S5-S024a_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S024a_2



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	6
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	8.0 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	27	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1761583 ft	**UTMN:** 14211938 ft		

Stream S5-S024a_2 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	123	0.02	0.00
5	123	0.02	0.00
6	35	0.01	0.00
7	35	0.01	0.00
8	35	0.01	0.00
RPA 8	42	0.01	0.00

Description of Potential Impact:
Impacts to S5-S024a_2 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel is a dump rock gutter that outlets to a wetland (W24). There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW on the left bank and new field on the right bank. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S024a_2 are on the second page of this form.

Stream Impacts S5-S024a_2

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S024a_2 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 122 LAT.: 39.16213 LONG.: RIVER CODE: RIVER MILE:

DATE: 04/23/12 SCORER: KSS/DEW COMMENTS: (Long: -86.57252) (Dump Rock Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 8'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 2.44

HHEI Metric Points

Substrate Max = 40: 7 (A + B)

Pool Depth Max = 30: 0

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **90%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

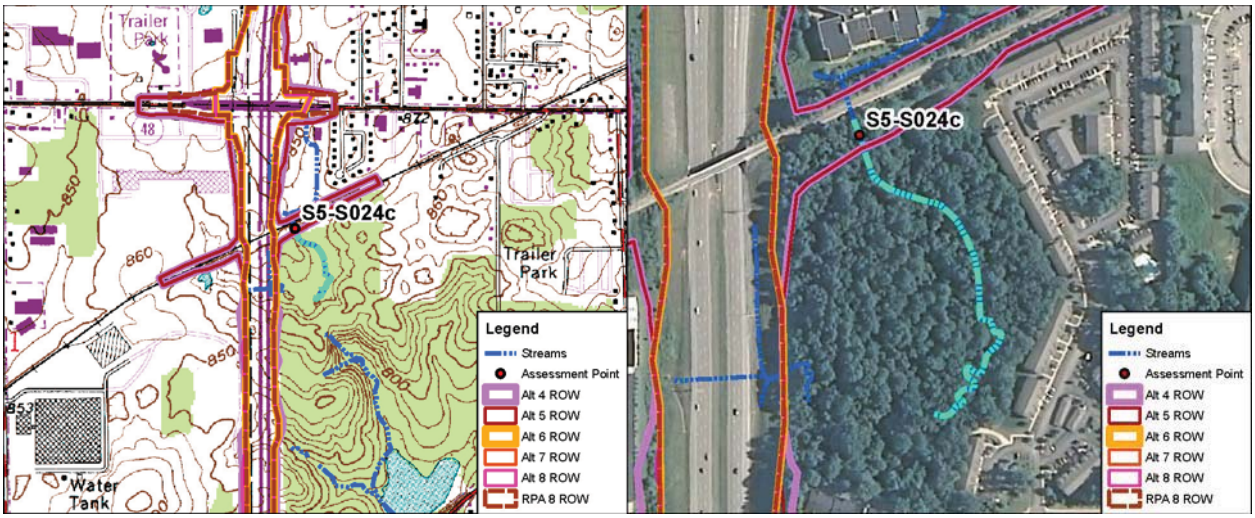
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

See Stream Assessment Form
S5-S024a_2 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S024c



Site Location on Bloomington USGS Quadrangle **Site Location on 2010 Aerial Photograph**

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	6
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	9.0 feet
Channelized/Type:	Yes/Natural	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	32	**Watershed Area:**	0.04 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Clay
UTME: 1761778 ft	**UTMN:** 14211548 ft		

Stream S5-S024c – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	76	0.02	0.37
5	76	0.02	0.37
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S024c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate of S5-S024c is predominately clay. There is a wide riparian corridor on both banks of the stream. The floodplain consists primarily of immature forest where alternatives 4 and 5 cross the stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S024c are on the second page of this form.

Stream Impacts S5-S024c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **32**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S024c | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.16105 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/11/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.57184) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	9%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	80%
☑	GRAVEL (2-64 mm) [9 pts]	11%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% **(A)** | Substrate Percentage Check: 100% **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 | **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40

12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 9'/1' | **AVERAGE BANKFULL WIDTH (meters):** 2.74

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☑ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☑ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **50%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

incised channel, steep unstable banks

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

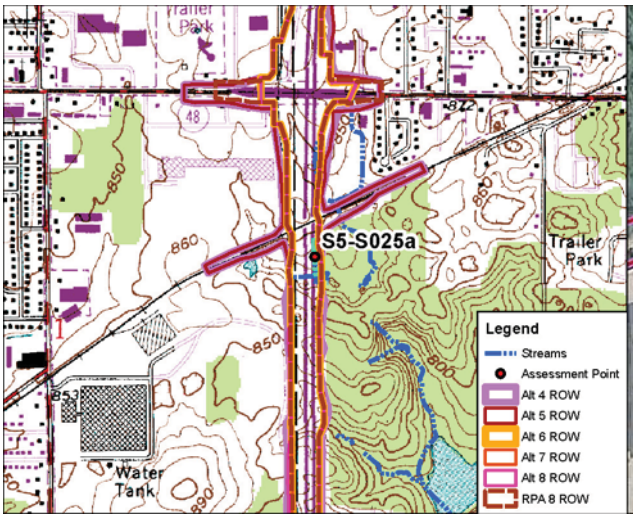
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

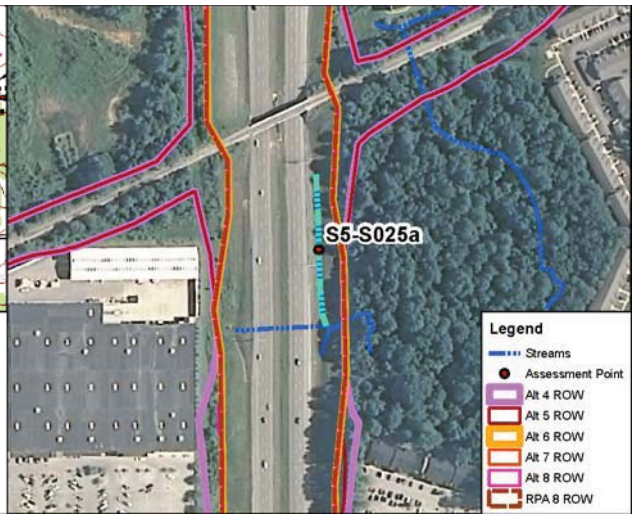
See Stream Assessment Form
S5-S024c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S025a



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	6
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	2.7 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	0.4 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	23	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1761512 ft	**UTMN:** 14221120 ft		

Stream S5-S025a – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	395	0.02	0.09
5	395	0.02	0.11
6	395	0.02	0.00
7	395	0.02	0.00
8	395	0.02	0.00
RPA 8	395	0.02	0.00

Description of Potential Impact:
Impacts to S5-S025a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. No connection to a TNW was found; thus this resource shall be considered isolated. The gravel bottom roadside ditch is located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S025a are on the second page of this form.

Stream Impacts S5-S025a

Photograph Taken Upstream

Photograph Taken Downstream

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 23

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S025a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.15988 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS | COMMENTS: (Long:-86.57278) Isolated (Roadside Ditch-Mod Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	5%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	80%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	15%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% **(A)** | Substrate Percentage Check: 100% **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 | **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40

18

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 2.7'/0.4' | **AVERAGE BANKFULL WIDTH (meters):** 0.82

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek (>2 miles)** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

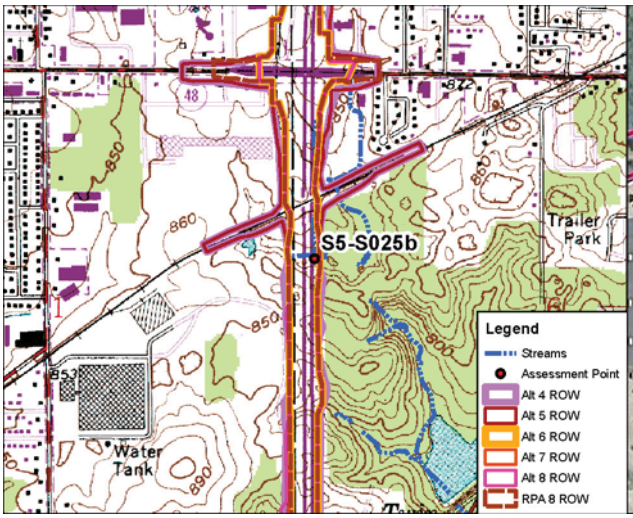
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

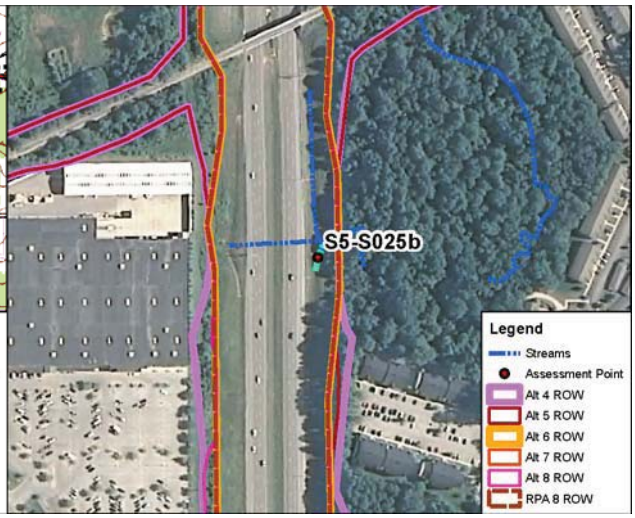
See Stream Assessment Form
S5-S025a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S025b



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Concrete Gutter	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	6
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	1.2 feet
Channelized/Type:	Yes/Drainage ditch	**OHWM Depth:**	0.1 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	12	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Silt
UTME: 1761526 ft	**UTMN:** 14220879 ft		

Stream S5-S025b – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	74	0.01	0.00
5	74	0.01	0.00
6	74	0.01	0.00
7	74	0.01	0.00
8	74	0.01	0.00
RPA 8	74	0.01	0.00

Description of Potential Impact:
Impacts to S5-S025b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. No connection to a TNW was found; thus this resource shall be considered isolated. The ditch is located within existing INDOT ROW. There is no riparian buffer associated with this artificial channel. The floodplain consists of maintained INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S025b are on the second page of this form.

Stream Impacts S5-S025b

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S025b | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 73 | LAT.: 39.15922 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 04/23/12 | SCORER: KSS/DEW | COMMENTS: (Long:-86.57274) Isolated (Drainage Ditch-Mod Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	☐ BLDR SLABS [16 pts]	0%	☑	☑ SILT [3 pt]	0%
☐	☐ BOULDER (>256 mm) [16 pts]	0%	☐	☐ LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	☐ BEDROCK [16 pt]	0%	☐	☐ FINE DETRITUS [3 pts]	0%
☐	☐ COBBLE (65-256 mm) [12 pts]	0%	☐	☐ CLAY or HARDPAN [0 pt]	0%
☐	☐ GRAVEL (2-64 mm) [9 pts]	0%	☐	☐ MUCK [0 pts]	0%
☐	☐ SAND (<2 mm) [6 pts]	0%	☐	☐ ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 1.2'/0.1' **AVERAGE BANKFULL WIDTH (meters):** 0.36

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☑	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.00**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

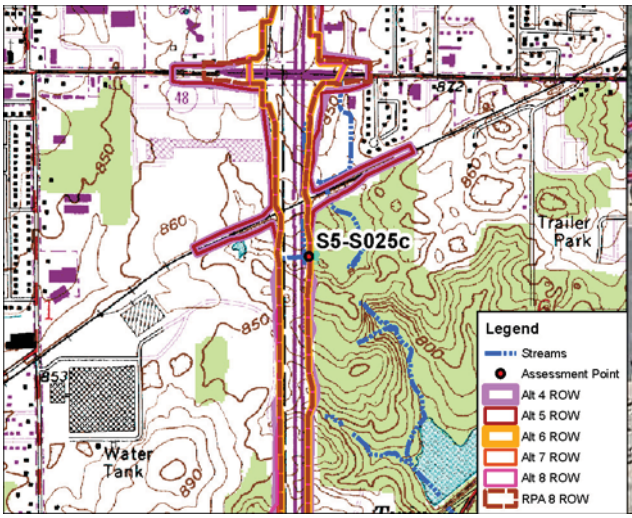
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

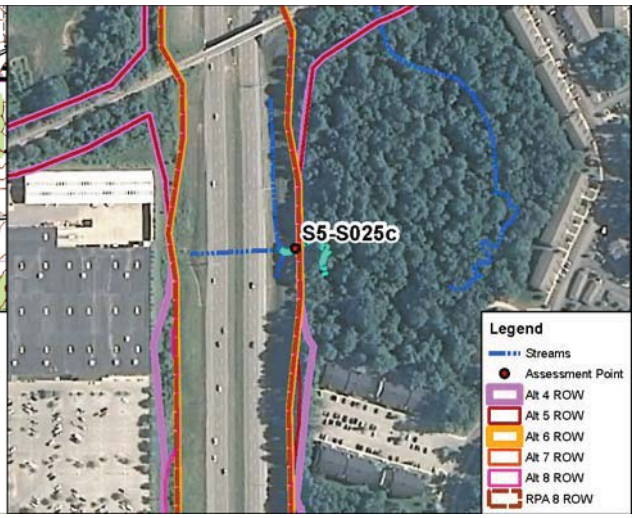
See Stream Assessment Form
S5-S025b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S025c



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	6
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	10.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	2.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	27	**Watershed Area:**	0.01 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Silt/hardpan
UTME: 1761569 ft	**UTMN:** 14220925 ft		

Stream S5-S025c – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	54	0.01	0.00
5	56	0.01	0.00
6	56	0.01	0.00
7	56	0.01	0.00
8	56	0.01	0.00
RPA 8	56	0.01	0.00

Description of Potential Impact:
Impacts to S5-S025c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The predominant substrate is silt on hardpan. There is a wide riparian corridor on both banks where the Alternatives cross this isolated (sinking) stream. The floodplain consists primarily of immature forest. Photographs taken upstream and downstream near where these Alternatives cross S5-S025c are on the second page of this form.

Stream Impacts S5-S025c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S025c | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.15935 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/08/06 | SCORER: A Rogers | COMMENTS: (Long: -86.57259) Isolated (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	70%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☑	CLAY or HARDPAN [0 pt]	20%
☐	GRAVEL (2-64 mm) [9 pts]	5%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	5%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 9.8' / 2' **AVERAGE BANKFULL WIDTH (meters):** 2.99

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS: Surface Conveyance only - Stream drops into sinkhole

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☑	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **32** NRCS Soil Map Stream Order **1**

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/04/06** Quantity: **0.01**

Photograph Information: **0001 Upstream / 0002 Downstream / 0003 Right Bank / 0004 Left Bank**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **85%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

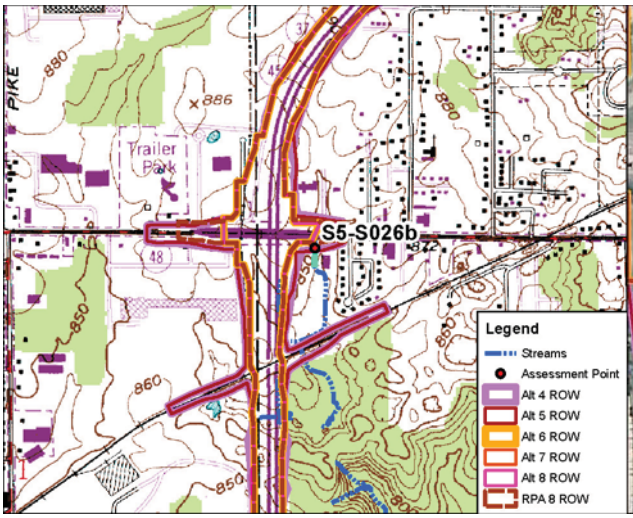
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

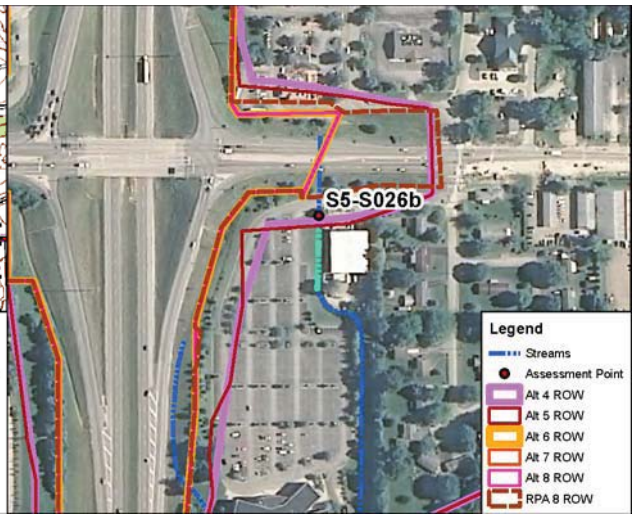
See Stream Assessment Form
S5-S025c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S026b



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	6
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	6.0 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	1.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	52	**Watershed Area:**	0.33 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1761896 ft	**UTMN:** 14222669 ft		

Stream S5-S026b – Modified Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	17	0.01	0.00
5	30	0.01	0.00
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S026b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel's substrate consists of sand and gravel. This captured stream channel is located along a driveway of a commercial facility. There is no riparian buffer associated with this ditch. The floodplain consists of the urban uses along both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S026b are on the second page of this form.

Stream Impacts S5-S026b

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 52

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S026b | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.33

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.16413 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/11/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.57140) (Roadside Ditch-Modified Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	49%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	51%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☑	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 8

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 6'/1.5' **AVERAGE BANKFULL WIDTH (meters):** 1.83

HHEI Metric Points

Substrate Max = 40	17
A + B	
Pool Depth Max = 30	15
Bankfull Width Max=30	20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☑	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Roadway runoff

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

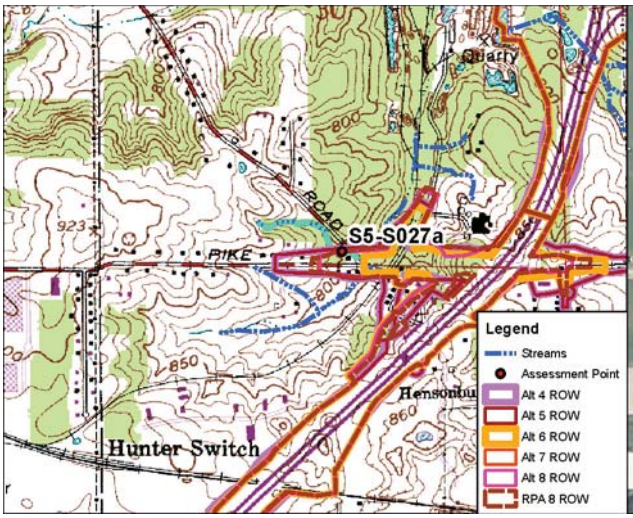
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

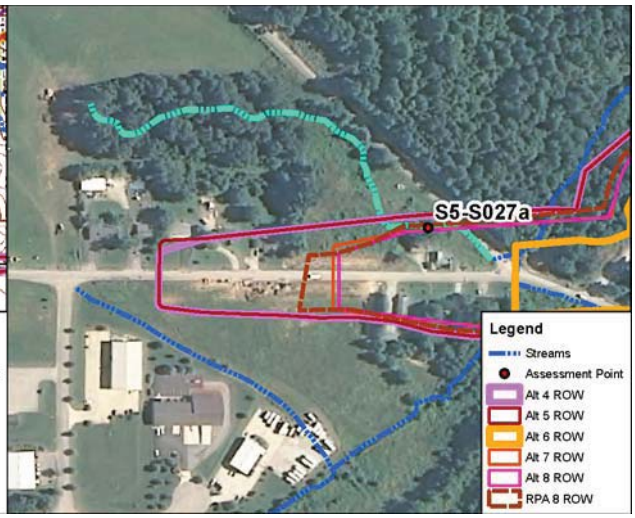
See Stream Assessment Form
S5-S026b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S027a



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	6
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	30	**Watershed Area:**	0.05 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1761896 ft	**UTMN:** 14222669 ft		

Stream S5-S027a – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	333	0.02	0.26
5	333	0.02	0.26
6	0	0.00	0.00
7	125	0.01	0.11
8	116	0.01	0.08
RPA 8	236	0.01	0.09

Description of Potential Impact:
Impacts to S5-S027a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of gravel, sand and silt. There is a moderately wide riparian corridor on both banks of the stream where it meanders through a residential property. The floodplain consists of an old field and residential use. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S027a are on the second page of this form.

Stream Impacts S5-S027a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **30**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S027a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.05

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.17951 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.56470) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	20%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	25%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 5

HHEI Metric Points

Substrate Max = 40

20

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 4

Pool Depth Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 2.6' / 1.0' **AVERAGE BANKFULL WIDTH (meters):** 1.00

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **27** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **30%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

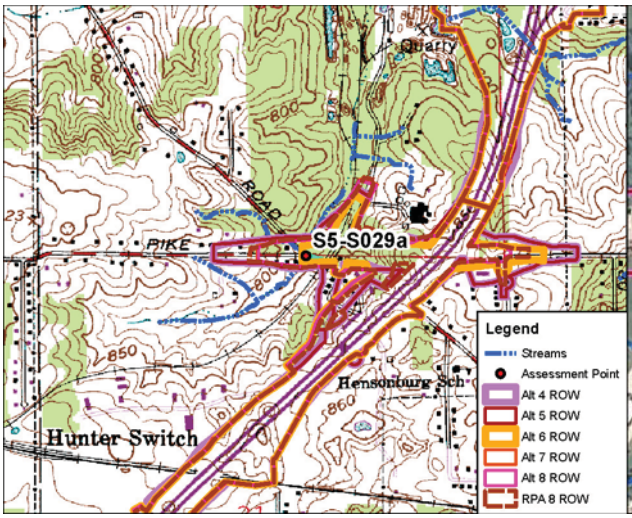
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

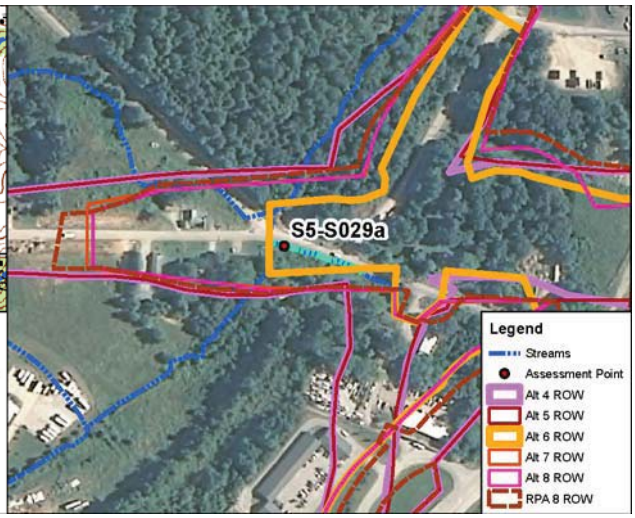
See Stream Assessment Form
S5-S027a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S029a



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	30
Quarter:	SE	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.8 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	29	**Watershed Area:**	0.08 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1764034 ft	**UTMN:** 14228124 ft		

Stream S5-S029a – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	258	0.02	0.03
5	258	0.02	0.03
6	242	0.02	0.03
7	258	0.02	0.03
8	258	0.02	0.03
RPA 8	258	0.02	0.03

Description of Potential Impact:
Impacts to S5-S029a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. This segment of stream is captured by a ditch that flows along West Vernal Pike. The substrate consists primarily of gravel, sand, and boulder slabs. There is no riparian buffer associated with this captured channel. The floodplain consists of the roadway on the right bank and an old field on the left. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S029a are on the second page of this form.

Stream Impacts S5-S029a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S029a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.08

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.17909 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.56377) (Roadside Ditch-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	25%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	35%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	30%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 3

Pool Depth Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 2.8' / 1.0' **AVERAGE BANKFULL WIDTH (meters):** 0.90

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☑	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **27** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **90%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

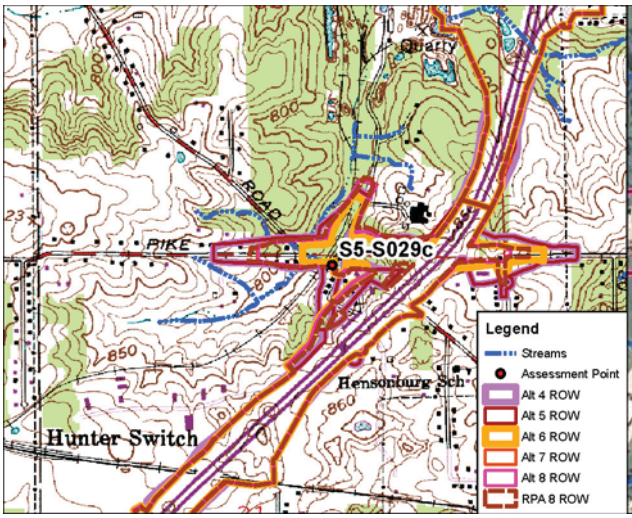
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➔

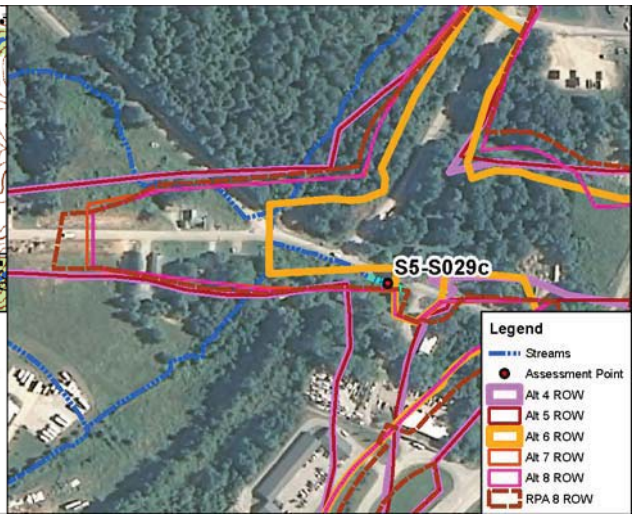
See Stream Assessment Form
S5-S029a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S029c



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	31
Quarter:	NE	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.8 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	1.0 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	29	**Watershed Area:**	0.08 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Gravel/sand
UTME: 1764304 ft	**UTMN:** 14228027 ft		

Stream S5-S029c – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	107	0.01	0.00
5	107	0.01	0.00
6	33	0.01	0.00
7	107	0.01	0.00
8	107	0.01	0.00
RPA 8	99	0.01	0.00

Description of Potential Impact:
Impacts to S5-S029c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. This segment of stream is captured by a ditch that flows along West Vernal Pike. The substrate consists primarily of gravel, sand, and silt. There is no riparian buffer associated with this channel. The floodplain consists of the roadway on the right bank and an old field on the left. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S029c are on the second page of this form.

Stream Impacts S5-S029c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S029c | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.08

LENGTH OF STREAM REACH (ft): 105 | LAT.: 39.17882 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.56282) (Roadside Ditch-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	25%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	10%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	35%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	30%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 3

Pool Depth Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW - 2.8' / 1.0' **AVERAGE BANKFULL WIDTH (meters):** 0.90

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☑	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **27** NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **90%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

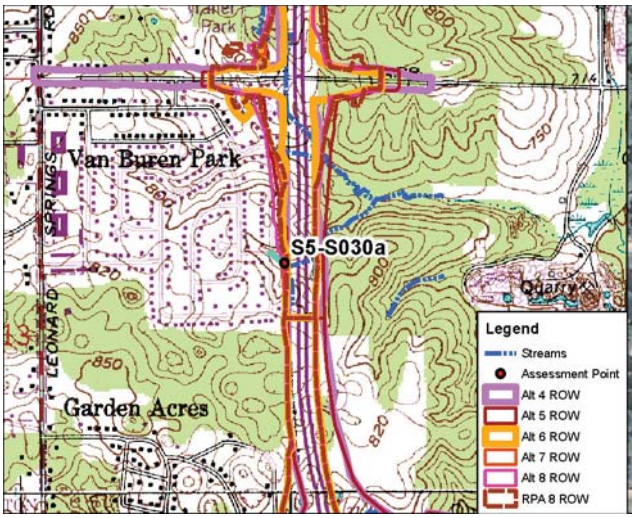
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

See Stream Assessment Form
S5-S029c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S030a



Site Location on Bloomington USGS Quadrangle

Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	13
Quarter:	NE	**Township:**	T8N
Range:	R2W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	3.0 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	16	**Watershed Area:**	0.03 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand
UTME: 1761335 ft	**UTMN:** 14210797 ft		

Stream S5-S030a – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	19	0.01	0.10
5	16	0.01	0.09
6	13	0.01	0.08
7	81	0.01	0.13
8	64	0.01	0.13
RPA 8	16	0.01	0.09

Description of Potential Impact:
Impacts to S5-S030a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of sand. There is no riparian buffer associated with this stream. The floodplain consists of a maintained utility line ROW. Photographs taken downstream in the area where these Alternatives cross S5-S030a are on the second page of this form.

Stream Impacts S5-S030a

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 16

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S030a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.03

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.13153 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/11/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.57358) (Natural-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	95%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40

11

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 3'/0.5' **AVERAGE BANKFULL WIDTH (meters):** 0.90

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☑	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Van Buren**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Roadway runoff

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

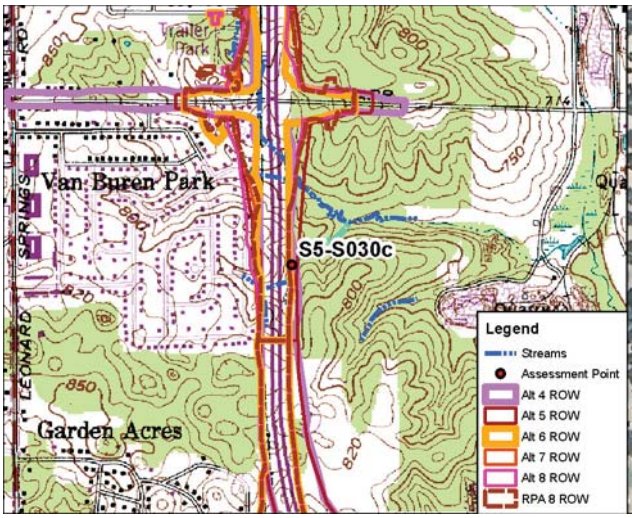
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

See Stream Assessment Form
S5-S030a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S030c



Site Location on Bloomington USGS Quadrangle

Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Clear Creek	**Section:**	18
Quarter:	NW	**Township:**	T8N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120208090	**OHWM Width:**	8.2 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.9 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	38	**Watershed Area:**	0.03 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/gravel
UTME: 1761687 ft	**UTMN:** 14211013 ft		

Stream S5-S030c –Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	265	0.05	0.75
5	303	0.06	0.88
6	100	0.02	0.14
7	100	0.02	0.14
8	100	0.02	0.14
RPA 8	100	0.02	0.14

Description of Potential Impact:
Impacts to S5-S030c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of sand and gravel. There is a narrow riparian corridor consisting of INDOT ROW on the left bank and a wide riparian buffer consisting of immature forest on the right bank. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S030c are on the second page of this form.

Stream Impacts S5-S030c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **38**

SITE NAME/LOCATION: **I-69 Section 5**

SITE NUMBER: **S5-S030c** RIVER BASIN: **White River** DRAINAGE AREA (mi^2): **0.03**

LENGTH OF STREAM REACH (ft): **200** LAT.: **39.13212** LONG.: _____ RIVER CODE: _____ RIVER MILE: _____

DATE: **04/23/12** SCORER: **KSS** COMMENTS: **(Long: -86.57233) (Natural-Class I)**

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	45%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	50%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **5.00%** (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15** **TOTAL NUMBER OF SUBSTRATE TYPES:** **3**

HHEI Metric Points

Substrate Max = 40

18

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: _____ **MAXIMUM POOL DEPTH (centimeters):** **0**

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: **OHW = 8.2'/0.9'** **AVERAGE BANKFULL WIDTH (meters):** **2.50**

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☑	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☑ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☑ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Clear Creek (>2 miles)** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Perry**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **04/19/12** Quantity: **0.20**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **10%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

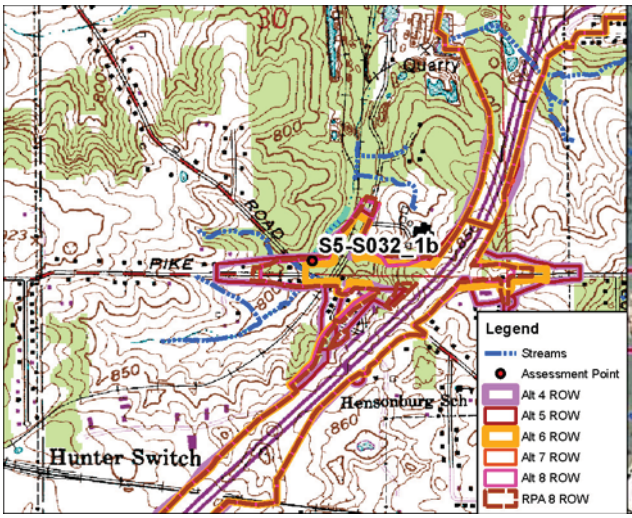
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

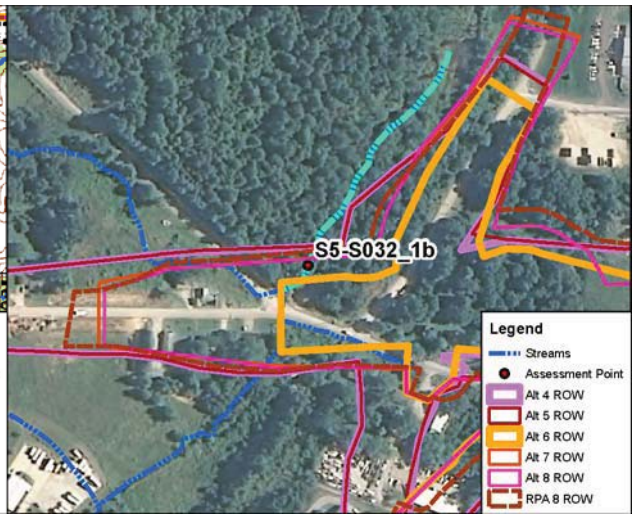
See Stream Assessment Form
S5-S030c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S032_1b



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	30
Quarter:	SE	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.8 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.2 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	55	**Watershed Area:**	0.41 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Boulder slabs
UTME: 1764067 ft	**UTMN:** 14228275 ft		

Stream S5-S032_1b –Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	146	0.01	0.91
5	146	0.01	0.91
6	49	0.01	0.14
7	113	0.01	0.47
8	111	0.01	0.50
RPA 8	133	0.01	0.55

Description of Potential Impact:
Impacts to S5-S032_1b for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of cobble overlaying boulder slabs. There is wide immature forested buffer associated with both stream banks where the Alternatives cross this stream. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S032_1b are on the second page of this form.

Stream Impacts S5-S032_1b

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **55**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S032_1b | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.41

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.17950 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/12/11 | SCORER: DEW/KSS | COMMENTS: (Long: -86.56365) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	☑ BLDR SLABS [16 pts]	80%	☐	☐ SILT [3 pt]	0%
☐	☐ BOULDER (>256 mm) [16 pts]	0%	☐	☐ LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	☐ BEDROCK [16 pt]	0%	☐	☐ FINE DETRITUS [3 pts]	0%
☑	☐ COBBLE (65-256 mm) [12 pts]	20%	☐	☐ CLAY or HARDPAN [0 pt]	0%
☐	☐ GRAVEL (2-64 mm) [9 pts]	0%	☐	☐ MUCK [0 pts]	0%
☐	☐ SAND (<2 mm) [6 pts]	0%	☐	☐ ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 100.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 28 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40

30

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☑ > 30 centimeters [20 pts]	☐ > 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5 pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 40

Pool Depth Max = 30

20

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐ > 4.0 meters (> 13') [30 pts]	☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑ ≤ 1.0 m (<=3' 3") [5 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS: OHW = 2.8'/1.2' **AVERAGE BANKFULL WIDTH (meters):** 0.90

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐ Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐ Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☑ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - [✓] Yes [ ] No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

[✓] WWH Name: **Stout Creek** Distance from Evaluated Stream _____

[ ] CWH Name: _____ Distance from Evaluated Stream _____

[ ] EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **15%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Roadway runoff

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

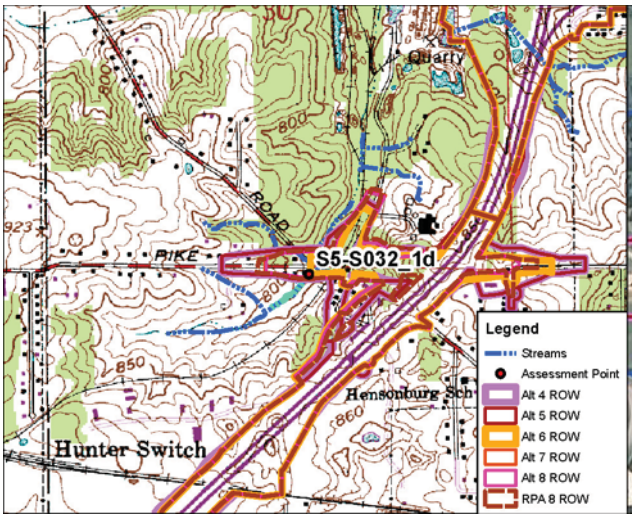
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

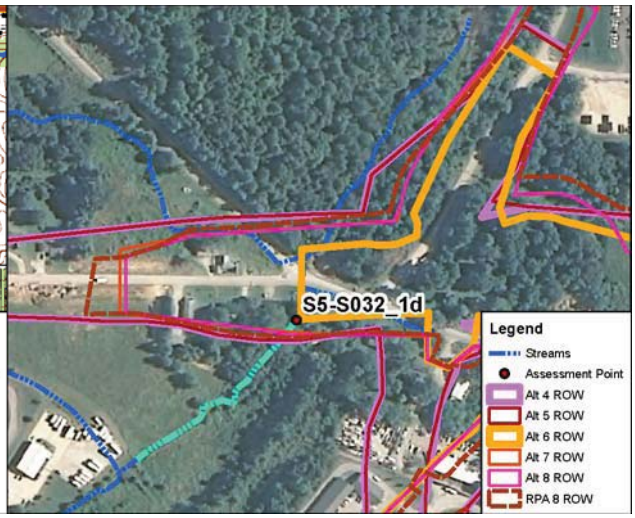
See Stream Assessment Form
S5-S032_1b for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S032_1d



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	31
Quarter:	NE	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.8 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	1.2 feet
Stream Type:	Intermittent	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	48	**Watershed Area:**	0.41 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Bedrock/silt
UTME: 1763982 ft	**UTMN:** 14228048 ft		

Stream S5-S032_1d –Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	143	0.01	0.00
5	142	0.01	0.00
6	43	0.01	0.00
7	115	0.01	0.00
8	122	0.01	0.00
RPA 8	133	0.01	0.00

Description of Potential Impact:
Impacts to S5-S032_1d for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists predominantly of silt overlaying bedrock. There is no riparian buffer associated with the left bank and a narrow buffer on the right bank consisting of an old field. The floodplain along the left bank is a residential yard. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S032_1d are on the second page of this form.

Stream Impacts S5-S032_1d

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : **48**

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S032_1d | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.41

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.17888 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.56395) (Natural-Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	40%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☑	BEDROCK [16 pt]	50%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	5%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	5%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 50.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 19 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

23

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☑ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 40

Pool Depth Max = 30

20

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: OHW - 2.8' / 1.2' **AVERAGE BANKFULL WIDTH (meters):** 0.85

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: **27** NRCS Soil Map Stream Order **2**

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: **149 Upstream / 150 Downstream / 151 Right bank / 152 Left bank**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

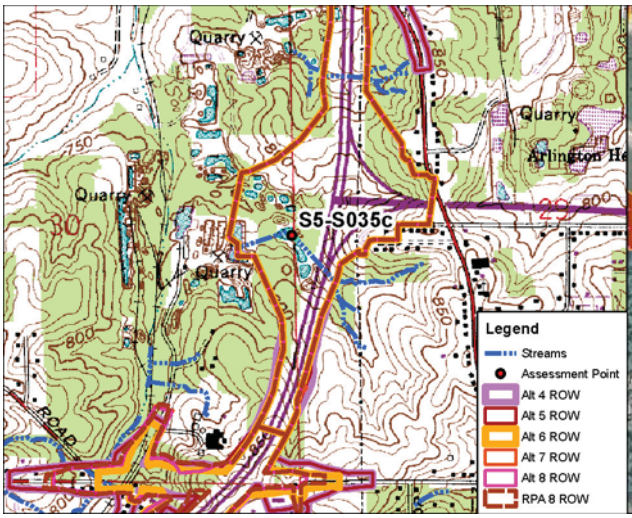
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

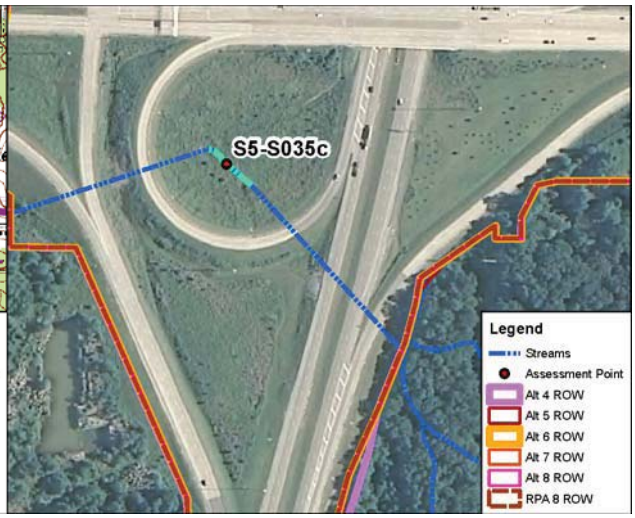
See Stream Assessment Form
S5-S032_1d for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S035c



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	30
Quarter:	SE	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	5.0 feet
Channelized/Type:	Yes/Roadside Ditch	**OHWM Depth:**	1.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	46	**Watershed Area:**	0.12 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Sand/silt
UTME: 1766011 ft	**UTMN:** 14230690 ft		

Stream S5-S035c – Modified Class II PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	152	0.02	0.00
5	152	0.02	0.00
6	152	0.02	0.00
7	152	0.02	0.00
8	152	0.02	0.00
RPA 8	152	0.02	0.00

Description of Potential Impact:
Impacts to S5-S035c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a mostly sandy-bottomed drainage ditch located within existing INDOT ROW. There is no riparian buffer associated with this man-made channel. The floodplain consists of INDOT ROW. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S035c are on the second page of this form.

Stream Impacts S5-S035c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 46

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S035c | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 152 | LAT.: 39.18611 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/11/12 | SCORER: DEW/KSS | COMMENTS: (Long: -86.55675) (Roadside Ditch-Modified Class II)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	49%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☑	SAND (<2 mm) [6 pts]	51%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 **TOTAL NUMBER OF SUBSTRATE TYPES:**

HHEI Metric Points

Substrate Max = 40

11

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☑	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 10

Pool Depth Max = 30

15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 5'/1.2' **AVERAGE BANKFULL WIDTH (meters):** 1.52

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **09/29/11** Quantity: **0.02**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **100%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

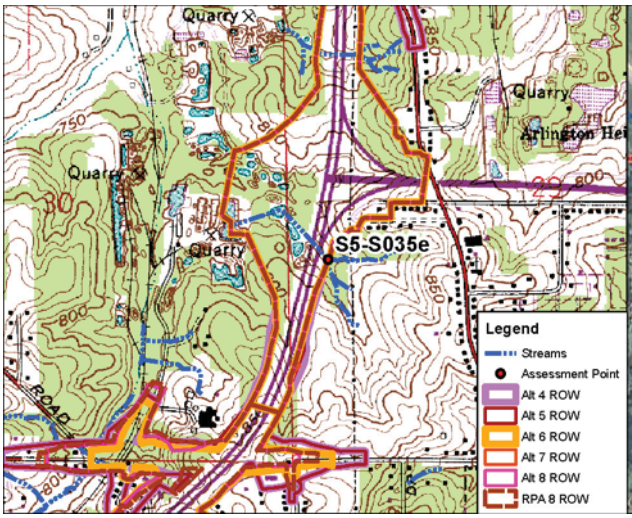
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

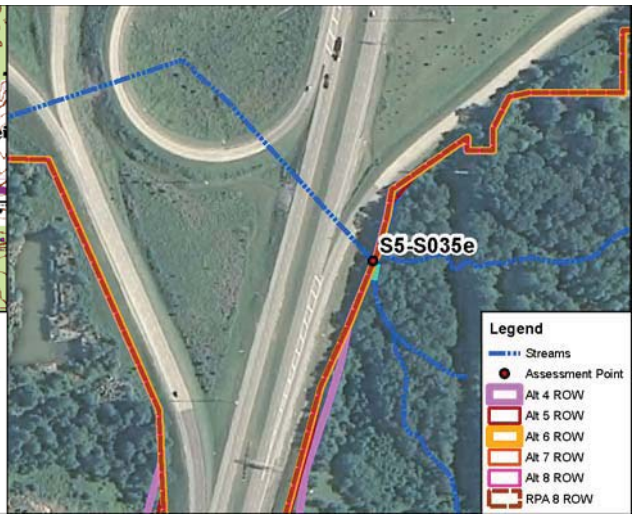
See Stream Assessment Form
S5-S035c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S035e



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	29
Quarter:	SW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	8.0 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	0.2 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	27	**Watershed Area:**	0.06 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1766464 ft	**UTMN:** 14230209 ft		

Stream S5-S035e – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	6	0.01	0.00
5	8	0.01	0.00
6	8	0.01	0.00
7	8	0.01	0.00
8	8	0.01	0.00
RPA 8	8	0.01	0.00

Description of Potential Impact:
Impacts to S5-S035e for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a dump rock gutter located within existing INDOT ROW. There is a wide riparian buffer along the right bank and no riparian buffer associated with this artificial channel's left bank. The floodplain consists of INDOT ROW on the left bank and immature forest on the right. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S035e are on the second page of this form.

Stream Impacts S5-S035e

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S035e | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.06

LENGTH OF STREAM REACH (ft): 55 | LAT.: 39.18478 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 10/11/12 | SCORER: DEW/KSS | COMMENTS: (Long: -86.55516) (Dump Rock Gutter-Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	100%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 1

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☑	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 8'/0.2' **AVERAGE BANKFULL WIDTH (meters):** 2.44

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **09/29/11** Quantity: **0.02**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **80%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

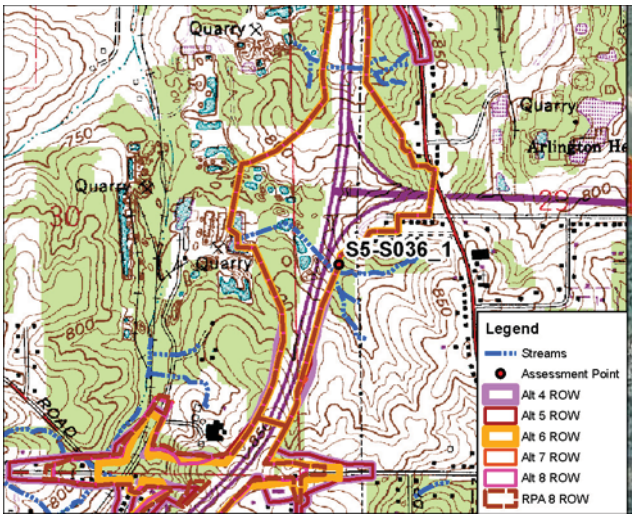
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

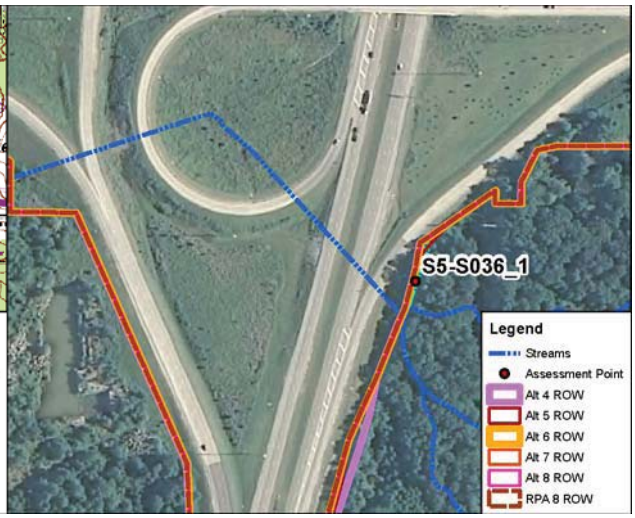
See Stream Assessment Form
S5-S035e for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S036_1



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	29
Quarter:	SW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	3.0 feet
Channelized/Type:	Yes/Dump Rock Gutter	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	No
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	No
Evaluation Score:	13	**Watershed Area:**	0.24 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Artificial
UTME: 1766503 ft	**UTMN:** 14230300 ft		

Stream S5-S036_1 – Modified Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	0	0.00	0.00
5	36	0.01	0.01
6	0	0.00	0.00
7	0	0.00	0.00
8	0	0.00	0.00
RPA 8	0	0.00	0.00

Description of Potential Impact:
Impacts to S5-S036_1 for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The channel consists of a dump rock gutter located within existing INDOT ROW. There is a wide riparian buffer along the left bank and no riparian buffer associated with this artificial channel's right bank. The floodplain consists of INDOT ROW on the right bank and immature forest on the left. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S036_1 are on the second page of this form.

Stream Impacts S5-S036_1

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 13

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S036_1 RIVER BASIN: White River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT. LONG. RIVER CODE RIVER MILE

DATE: 10/11/11 SCORER: DEW/KSS COMMENTS: Dump Rock Gutter (Modified Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	0%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☑	ARTIFICIAL [3 pts]	95%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A)

Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 2

HHEI Metric Points

Substrate Max = 40: 8

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: **MAXIMUM POOL DEPTH (centimeters):** 10

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW = 3'/.5' **AVERAGE BANKFULL WIDTH (meters):** 0.91

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☑ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **50%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

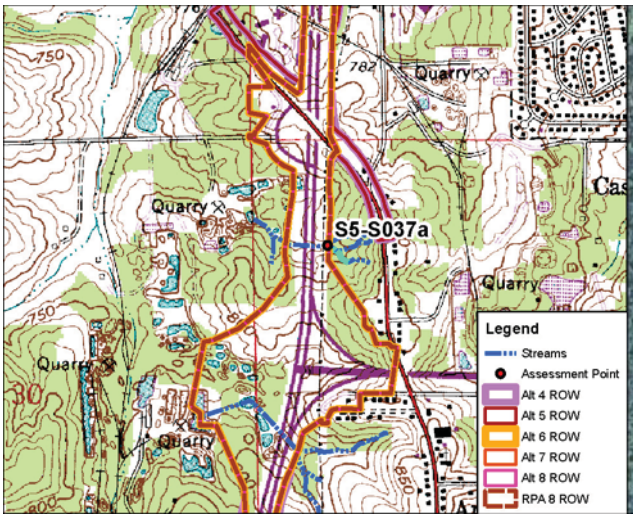
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

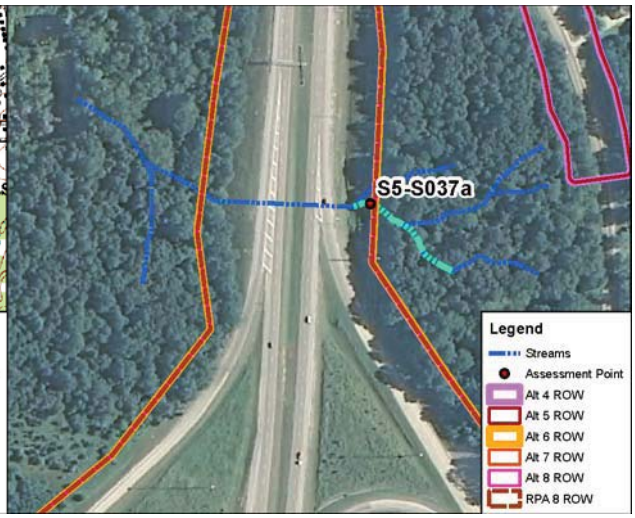
See Stream Assessment Form
S5-S036_1 for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S037a



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	29
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	17	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Silt/leaf pack
UTME: 1766503 ft	**UTMN:** 14230300 ft		

Stream S5-S037a– Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	59	0.01	0.00
5	61	0.01	0.00
6	61	0.01	0.00
7	61	0.01	0.00
8	61	0.01	0.00
RPA 8	61	0.01	0.00

Description of Potential Impact:
Impacts to S5-S037a for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate is predominately silt and leaf pack. There is a wide riparian buffer associated with this stream. The floodplain consists of mature forests on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S037a are on the second page of this form.

Stream Impacts S5-S037a

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S037a | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.19064 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.55402) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	50%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	5%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A) | Substrate Percentage Check: 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 | **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

HHEI Metric Points

Substrate Max = 40

12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: OHW 2.6'/0.5' | **AVERAGE BANKFULL WIDTH (meters):** 0.79

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH L	R	(Per Bank)	FLOODPLAIN QUALITY L	R	(Most Predominant per Bank)	L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: **Bloomington** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **05/12/06** Quantity: **0.39**

Photograph Information: _____

Elevated Turbidity? (Y/N): **N** Canopy (% open): **25%**

Were samples collected for water chemistry? (Y/N): **N** (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

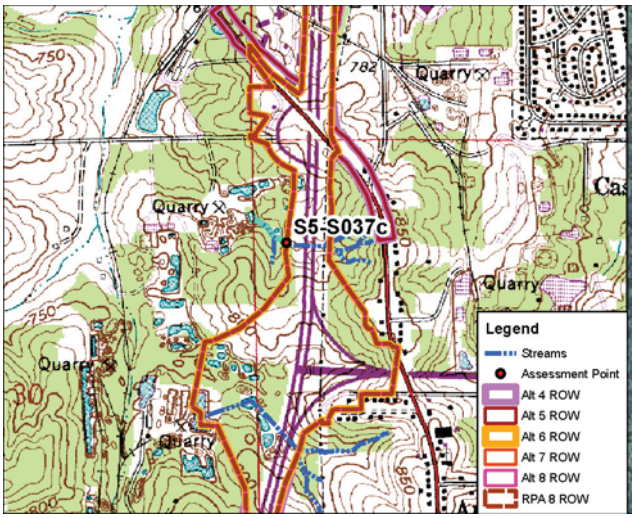
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW →

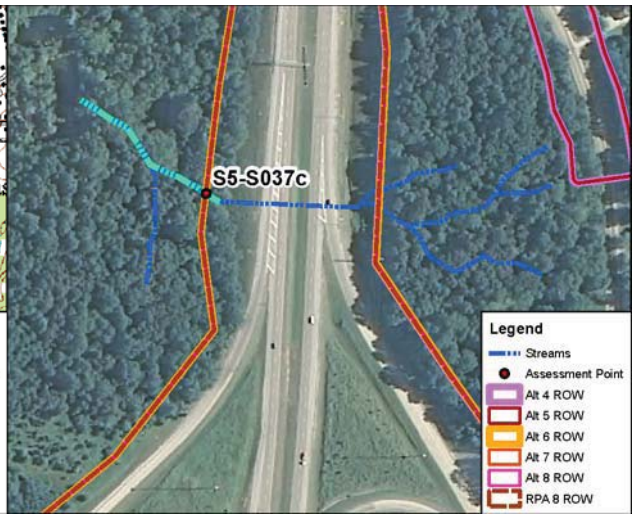
See Stream Assessment Form
S5-S037a for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form

Stream Impacts S5-S037c



Site Location on Bloomington USGS Quadrangle



Site Location on 2010 Aerial Photograph

Aquatic Resource:	Stream	**USGS Quadrangle:**	Bloomington
Stream Name:	Unnamed Trib. Stout Creek	**Section:**	29
Quarter:	NW	**Township:**	T9N
Range:	R1W	**IDEM 303(d) List:**	N/A
Watershed:	05120202010	**OHWM Width:**	2.6 feet
Channelized/Type:	No/Natural	**OHWM Depth:**	0.5 feet
Stream Type:	Ephemeral	**USCOE Jurisdiction:**	Yes
Evaluation Type:	HHEI	**IDEM Jurisdiction:**	Yes
Evaluation Score:	17	**Watershed Area:**	0.02 sq mi
Legal Drain (Y/N):	N	**Predominant Sub:**	Silt/leaf pack
UTME: 1766340 ft	**UTMN:** 14232372 ft		

Stream S5-S037c – Class I PHWH			
Alternatives	**Length of Impact (feet)**	**Area of Impact (acres)**	**Riparian Impact (acres)**
4	41	0.01	0.18
5	41	0.01	0.18
6	41	0.01	0.18
7	41	0.01	0.18
8	41	0.01	0.18
RPA 8	41	0.01	0.18

Description of Potential Impact:
Impacts to S5-S037c for Alternatives 4, 5, 6, 7, 8 and RPA 8 are listed in the table above. The substrate is predominately silt and leaf pack. There is a wide riparian buffer associated with this stream. The floodplain consists of mature forests on both banks. Photographs taken upstream and downstream in the area where these Alternatives cross S5-S037c are on the second page of this form.

Stream Impacts S5-S037c

Photograph Taken Upstream

Photograph Taken Downstream

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: I-69 Section 5

SITE NUMBER: S5-S037c | RIVER BASIN: White River | DRAINAGE AREA (mi²): 0.02

LENGTH OF STREAM REACH (ft): 200 | LAT.: 39.19072 | LONG.: | RIVER CODE: | RIVER MILE:

DATE: 05/12/06 | SCORER: A Rogers | COMMENTS: (Long: -86.55556) (Natural-Class I)

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	50%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	5%
☐	GRAVEL (2-64 mm) [9 pts]	10%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	10%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% **(A)** | Substrate Percentage Check: 100% **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 | **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

HHEI Metric Points

Substrate Max = 40: 12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | **MAXIMUM POOL DEPTH (centimeters):** 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
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COMMENTS: OHW 2.6'/0.5' | **AVERAGE BANKFULL WIDTH (meters):** 0.79

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
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COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Stout Creek** Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

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County: **Monroe** Township / City: **Bloomington**

MISCELLANEOUS

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Is the sampling reach representative of the stream (Y/N) **Y** If not, please explain: _____

Additional comments/description of pollution impacts: _____

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Performed? (Y/N): **N** (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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FLOW →

See Stream Assessment Form
S5-S037c for site topographic map,
aerial photograph, and resource photographs

Save as pdf Reset Form